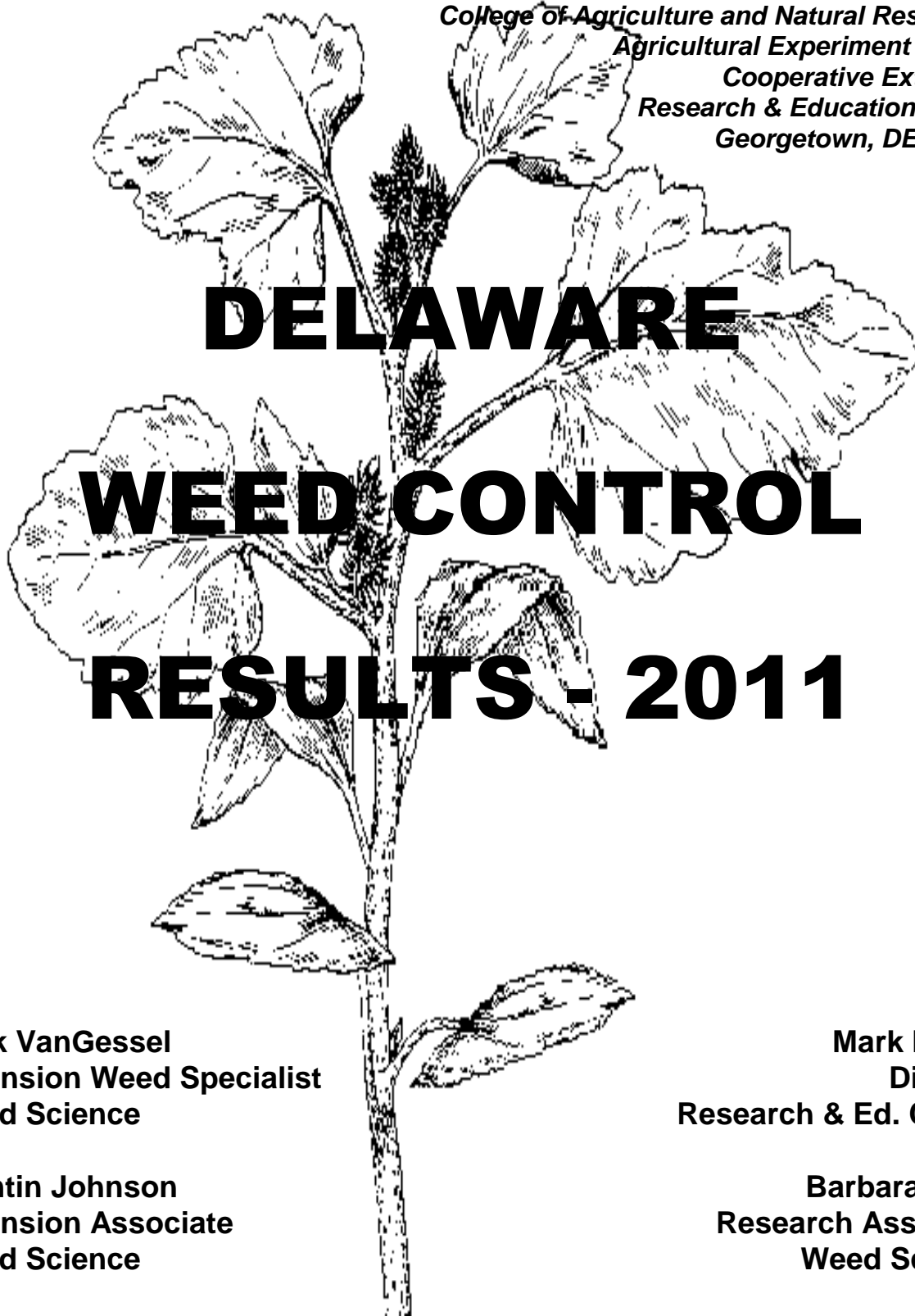


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DELAWARE WEED CONTROL RESULTS - 2011

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WEED CONTROL RESULTS

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The purpose of this report is to present results and details of many of the 2011 weed control field trials conducted by Cooperative Extension at the University of Delaware. Results are summarized from data obtained at the Georgetown Research and Education Center and other test locations throughout the state. These results, as well as results from previous years back to 2002, are available at the UD Weed Science web site; <http://www.rec.udel.edu/weedscience/>.

The results obtained and any conclusions stated are not published herein as recommended practices. The data in this report are especially intended for use by cooperators, commercial field workers, county agents, agricultural teachers, and researchers. They will also be of value to growers who are interested in following closely the development of new herbicides and weed control systems.

Treatments are listed by trade names to facilitate reading by non-technical people. No discrimination is intended and no endorsement is implied by the University of Delaware. Chemical index is cross-referenced by common and trade names.

Many of the chemicals listed are actually a combination of two or more herbicides. Where this is the case, the name of the combination is followed by the herbicides that make up that combination. For example, Bicep II Magnum is a combination of s-metolachlor and atrazine, so Bicep II Magnum will be listed as such:

Bicep II Magnum Premix	5.5 L	2.2 lb ai/A
----s-metolachlor	2.4	0.96
----atrazine	3.1	1.24

This quickly illustrates that Bicep II Magnum (5.5 L lb a.i./gal) contains 2.4 lb a.i./gal of s-metolachlor and 3.1 lb a.i./gal of atrazine, and that Bicep II Magnum applied at a rate of 2.2 lb a.i./A is equivalent to an application of s-metolachlor at 0.96 lb a.i./A and atrazine at 1.24 lb a.i./A.

When analyzing the information in this report, we strongly urge you to read carefully the site description section of each study. We trust you will find the information in this report useful and accurate.

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ACKNOWLEDGMENTS

The University of Delaware College of Agricultural Sciences and the Delaware Cooperative Extension gratefully acknowledge the farmers throughout the state that cooperated with us on several of our research projects.

A special thanks is extended to all of the companies that contributed services and materials, and whose products have been evaluated in these tests. The University of Delaware and commercial firms have a common interest in providing farmers with improved weed control systems. Without the support of industry, this very important program could not be continued.

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FMC Corp.	United Agri Products
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WEED INDEX

<u>Common Name</u>	<u>WSSA Code</u>	<u>Scientific Name</u>	<u>Trial</u>
Alfalfa, Volunteer	MEDSA	Medicago sativa L.	Corn9b, 10b
Amaranth, Palmer	AMAPA	Amaranthus palmeri S.Wats.	Corn6, 7, 8, 9a, 10a, 13, 14, 15, 16, 17, 18, 19, 20; SCR2; DSB1a; Soy4, 6, 7, 8, 9, 10, 11, 20; Bean3, 5, 6, 11
Anoda, Spurred	ANVCR	Anoda cristata (L.) Schlecht.	Corn2, 13
Bittercress, Hairy	CARHI	Cardamine hirsuta L.	Brndwn1, 2
Bluegrass, Annual	POAAN	Poa annua L.	SG7, 9, 10, 12
Bluegrass, Roughstalk	POATR	Poa trivialis L.	SG8
Broadleaves, Annual	ANNBR		Corn1, 2; SG2, 4; Pea1
Carpetweed	MOLVE	Mollugo verticillata L.	Soy5; Bean3; MELN1, Pep1
Chamomile, Mayweed	ANTCO	Anthemis cotula L.	SG1
Chickweed, Common	STEME	Stellaria media (L.) Vill./cyr.	SG12
Chickweed, Jagged	HLOUM	Holosteum umbellatum L.	Corn1; SG3, 9
Chickweed, Mouseear	CERVU	Cerastium vulgatum L.	SG1, 9, 10
Cocklebur, Common	XANST	Xanthium strumarium L. Ssp.	Bean4
Crabgrass Sp.	DIGSS	Digitaria ssp.	Corn2, 6, 7; DSB2
Crabgrass, Large	DIGSA	Digitaria sanguinalis (L.) Scop.	Corn8, 9a, 9b, 10b, 13, 15, 17, 18, 20; SCR2; DSB1a, 3; Soy1, 2, 6, 7, 20; MELN1, 2, 2b; Milo1; Pep1
Cress, Mouseear	ARBTH	Arabidopsis thaliana (L.) Heynh.	SG9
E.primrose, Cutleaf	OEOLA	Oenothera laciniata Hill	Corn1; SG9, 10; Soy1, 2, 20; Brndwn1, 4
Filaree, Redstem	EROCI	Erodium cicutarium (L.) L'Her. ex Ait.	SG10
Foxtail, Giant	SETFA	Setaria faberi Herrm.	MELN1; Pep1

<u>Common Name</u>	<u>WSSA Code</u>	<u>Scientific Name</u>	<u>Trial</u>
Garlic, Wild	ALLVI	Allium vineale L.	SG10
Geranium, Carolina	GERCA	Geranium carolinianum L.	Soy20
Goosefoot, Oakleaf	CHEGL	Chenopodium glaucum L.	MELN1
Goosegrass	ELEIN	Eleusine indica (L.) Gaertn.	MELN1, 5; Pep1
Grass, Annual	GGGAN		Corn3; Bean3; MELN5
Henbit	LAMAM	Lamium amplexicaule L.	Corn1; SG1, 3, 9, 12; Brndwn1, 2
Horsenettle, Carolina	SOLCA	Solanum carolinense L.	MELN2; Pep1
Horseweed	ERICA	Erigeron canadensis L.	Corn1; SG9; Soy12, 20; MELN1
Knawel	SCRAN	Scleranthus annuus L.	SG1, 2, 3, 10
Lambsquarters, Cmn.	CHEAL	Chenopodium album L.	Corn7, 9b, 10b; SCRN2; DSB3; Soy2, 9; Bean3, 5; MELN1, 2b; Pep1
Mornglry, Ivyleaf	IPOHE	Ipomoea hederacea (L.) Jacq.	Soy4, 11; Pep1
Mornglry, Pitted	IPOLA	Ipomoea lacunose L.	Soy6; Pep1
Mornglry Species	IPOSS	Ipomoea ssp.	Corn2, 3, 4, 6, 7, 8, 9a, 10a, 13, 14, 15, 16, 17, 18, 19, 20; SCRN2, 3; DSB1a, 3; Soy1, 2, 5, 6, 7, 8, 9, 10, 11; Bean3, 4, 5, 6, 7, 11; MELN2; Pep1
Nightshade, E. Black	SOLPT	Solanum ptycanthum Dun.	MELN1
Nutsedge, Yellow	CYPES	Cyperus esculentus L.	Bean4; MELN1, 2; Pep1
Panicum, Fall	PANDI	Panicum dichotomiflorum (L.) Michx.	MELN2b
Pansy, Field	VIORA	Viola rafinesquii Greene	Corn1; SG8, 10; DSB2; Soy12

<u>Common Name</u>	<u>WSSA Code</u>	<u>Scientific Name</u>	<u>Trial</u>
Pigweed Species	AMASS	Amaranthus ssp.	Corn2, 3, 4, 13; SCRN3; DSB2, 3; Soy1, 2, 5, 6; Bean3, 4, 7; MELN1, 2, 2b; Milo1; Pep1
Pokeweed, Common	PHTAM	Phytolacca americana L.	MELN1
Purslane, Common	POROL	Portulaca oleracea L.	MELN1, 2b
Ragweed, Common	AMBEL	Ambrosia elatior L.	Corn3, 20; DSB3; Soy1, 2, 5, 6, 9; Bean3, 5; MELN2
Rye, Volunteer	SECCE	Secale cereal L.	Brndwn1, 2
Ryegrass, Annual	LOLMU	Lolium multiflorum Lam.	Corn1, 11b, 12; SG1, 2, 9, 11
Sida, Prickly	SIDSP	Sida spinosa L.	DSB3; Soy4
Smartweed, Penn.	POLPY	Polygonum pensylvanicum L.	Pep1
Speedwell, Ivyleaf	VERHE	Veronica hederifolia L.	SG7, 8
Speedwell, Purslane	VERPG	Veronica peregrina L.	Corn1; SG9; Brndwn1
Spurge, Spotted	EPHMA	Euphorbia maculata L.	MELN1
Stinkgrass	ERACN	Eragrostis cilianensis (All.) E. Mosher	MELN1; Pep1
Velvetleaf	ABUTH	Abutilon theophrasti Medik.	Soy5
Vetch Species	VICSS	Vicia ssp.	SG10, 14
Woodsorrel, Yellow	OXAST	Oxalis stricta L.	MELN1

INDEX OF CHEMICALS

<u>Trade Name</u>	<u>Common Name</u>	<u>Trial</u>
Aatrex	atrazine	Corn2, 3, 4, 6, 7, 8, 9a, 9b, 10a, 10b, 11, 11b, 13, 14, 15, 16, 17, 18, 19, 20; SCR2, 3, 4; Brndwn2; Milo1
Abundit	glyphosate	Corn17, 18
Accent Q	nicosulfuron + safener	Corn5, 11
Accent SP	nicosulfuron	Corn5
Aim	carfentrazone	Corn4; SCR4; SG7, 9; Bean8
Authority First Premix	sulfentrazone + cloransulam	DSB2, 3; Soy1, 7, 9
Authority MTZ Premix	sulfentrazone + metribuzin	SG3; Soy2, 6
Authority XL Premix	sulfentrazone + chlorimuron	DSB2, 3; Soy2, 6
Autumn	iodosulfuron	Corn1
Axial XL	pinoxaden	SG1, 2, 8, 9, 11
Axiom Premix	flufenacet + metribuzin	SG1, 2, 4
A17622C	"experimental"	Corn6
Banvel	dicamba	Corn8; SG4
Basagran	bentazon	SCR4; DSB1a; Bean3, 7
Basis Premix	rimsulfuron + thifensulfuron	Corn6, 7, 15
BAS 94461H	"experimental"	SG2, 4
Bicep II Magnum Premix	s-metolachlor + atrazine	Corn6, 7, 9a, 9b, 10a, 10b, 12, 13, 20; SCR2; Milo1
Bicep Lite II Magnum Premix	s-metolachlor + atrazine	Corn14
Bravo Fungicide	chlorothalonil	MELN5
Cadet	fluthiacet	Corn4, 14; SCR4; Soy2, 6, 11; Bean8
Callisto	mesotrione	Corn4, 8, 13, 15, 16, 18
Camix Premix	s-metolachlor + mesotrione	Corn15; SCR2
Canopy EX Premix	chlorimuron + tribenuron	DSB2, 3

<u>Trade Name</u>	<u>Common Name</u>	<u>Trial</u>
Canopy Premix	chlorimuron + metribuzin	DSB2, 3
Capreno Premix	tembotrione + thiencazone + Isoxadifen	Corn3, 8, 10b, 11, 18
Chateau	flumioxazin	MELN2, 2b, 3
Cinch ATZ Premix	s-metolachlor + atrazine	Corn17, 18
Clarity	dicamba	Soy4, 5
Classic	chlorimuron	Soy2
Command	clomazone	Pep1
Curbit	ethalfluralin	MELN2, 2b
Devrinol	napropamide	Pep1
Dicamba XP	dicamba	Corn5
Dimate Insecticide	dimethoate	MELN5
Distinct Premix	dicamba + diflufenzopyr	Corn5
Dual II Magnum	s-metolachlor	Corn7, 10b, 11, 14, 19; SCR2; SG2; Soy1, 2, 6, 7, 8, 9, 10; Bean3, 11; MELN1, 3, 4
Dual Magnum	s-metolachlor	DSB1a; Bean5, 6; Pea1, 2; Pep1
Durango DMA	glyphosate	Corn2; Soy2
Everest	flucarbazone	SG10
Fierce Premix	flumioxazin + pyroxasulfone	Corn7, 9a, 9b, 15, 20; Soy2, 20; MELN2, 2b
Finesse Premix	chlorsulfuron + metsulfuron	SG7
Firstate	cloransulam	Soy1, 2, 6
Flexstar GT Premix	fomesafen + glyphosate	Soy2, 11
F-9310-6	"experimental"	Corn2, 7; Soy2
Glyphosate	glyphosate	DSB1a
GoalTender	oxyfluorfen	Pep1
Gramoxone Inteon	paraquat	Corn2, 11, 13; SG4; DSB3; Soy1, 2, 6; Brndwn1, 2, 4; MELN2, 2b, 3, 4

<u>Trade Name</u>	<u>Common Name</u>	<u>Trial</u>
Halex GT Premix	s-metolachlor + glyphosate + mesotrione	Corn2, 3, 6, 10a, 10b, 13, 15, 17
Harmony Extra SG Premix	thifensulfuron + tribenuron	SG8, 9, 10, 12, 14; Pea1
Harmony GT	thifensulfuron	Corn5
Harmony SG	thifensulfuron	Corn8, 18
Harness Xtra Premix	acetochlor + atrazine	Corn7, 9a, 9b, 10a, 10b
HE-111	“adjuvant”	Corn4, Soy11, 12
Hornet WDG Premix	flumetsulam + clopyralid	Corn8, 14
Ignite 280	glufosinate	SCRN2; DSB1a, 2; Soy1
Impact	topramezone	Corn8, 11, 11b, 14, 15; SCRN2, 3, 4
IMS + TCM	“experimental”	Corn1
KIH-485	pyroxasulfone	Corn9a, 9b; Pea2
Laudis	tembotrione	Corn8
Lexar Premix	s-metolachlor + mesotrione + atrazine	Corn9a, 9b, 13, 19; Bean4
Lumax Premix	s-metolachlor + mesotrione + atrazine	Corn3, 7, 9a, 9b, 10a, 10b, 12, 13, 15, 17, 18; SCRN2; Bean4; Milo1
Maverick	sulfosulfuron	SG8, 12
MCPA ester	MCPA ester	SG7, 10
Metribuzin	metribuzin	Corn1 ; SG4, 5, 7, 10
Mirage	glyphosate	Brndwn1, 2
MON 100111	“experimental”	Soy4
MON 100555	“experimental”	Soy4
Olympus	propoxycarbazone	SG8
OpTill Premix	saflufenacil + imazethapyr	DSB3
Option	foramsulfuron	Corn11; SCRN2
Osprey	mesosulfuron	SG1, 2, 7, 8, 9, 10, 11, 12

<u>Trade Name</u>	<u>Common Name</u>	<u>Trial</u>
Permit Plus Premix	halosulfuron + thifensulfuron	Corn6
Poast	sethoxydim	MELN5
PowerFlex	pyroxsulam	SG1, 7, 8, 9, 10, 11, 12
Prefar	bensulide	MELN1
Prefix Premix	s-metolachlor + fomesafen	DSB1a; Soy1, 2, 6, 9, 10, 20
Princep	simazine	Corn6, 9a, 9b
Pristine Fungicide	pyraclostrobin + boscalid	MELN5
Prowl	pendimethalin	DSB1a
Prowl H ₂ O	pendimethalin	Corn9a, 9b, 10a, 10b, 13; SCRN2
Pulsar Premix	dicamba + fluroxypyr	SG7, 10
Pursuit	imazethapyr	Bean6, 11; Pea1
Python	flumetsulam	Corn8
Rage D-Tech Premix	carfentrazone + 2,4-D ester	Corn2
Raptor	imazamox	Bean3
Realm Q Premix	rimsulfuron + mesotrione	Corn8, 10a, 10b, 15, 17
Reflex	fomesafen	DSB1a; Soy2, 11; Bean3; MELN1, 2, 2b, 3; Pea1
Require Q multi-pak	rimsulfuron + dicamba + safener	Corn5
Resolve Q multi-pak	rimsulfuron + thifensulfuron + safener	Corn5, 8
Resolve	rimsulfuron	Corn5, 8, 9a, 9b, 10a, 10b, 11, 11b, 12, 16, 18
Resource	flumiclorac	Corn4; Soy6, 11
Roundup Original Max	glyphosate	Corn15
Roundup PowerMax	glyphosate	Corn1, 2, 3, 7, 14, 19, 20; Soy2, 6, 7, 8, 10, 12, 20
Roundup WeatherMax	glyphosate	Corn4, 6, 8, 10a, 10b, 13, 15, 16; Soy5, 11, 20; Pea1

<u>Trade Name</u>	<u>Common Name</u>	<u>Trial</u>
Sandea	halosulfuron	Corn8; Bean3; MELN1, 2, 2b, 3, 4; Pep1
Select Max	clethodim	Corn12; DSB1a; MELN5
Sencor	metribuzin	SG9, 12; DSB1a; Brndwn2
Sequence Premix	glyphosate + s-metolachlor	Corn6, Soy2
Sharpen	saflufenacil	Corn19; SG2, 4; MELN3; Pea2
Simazine	simazine	Corn13
Sinbar	terbacil	MELN1, 2, 3
Sonic Premix	sulfentrazone + cloransulam	Soy2
Spartan	sulfentrazone	SG3; Bean8
Spartan Charge Premix	carfentrazone + sulfentrazone	SG3; Bean5, 6, 8, 11
Spirit Premix	prosulfuron + primisulfuron	Corn6
Starane EC	fluroxypyr	SG9, 14
Starane Ultra	fluroxypyr	SG1, 2, 4, 7, 10, 12, 14
Status Premix	diflufenzopyr + dicamba + safener	Corn4, 5, 8, 15
Steadfast Premix	nicosulfuron + rimsulfuron	Corn5
Steadfast Q Premix	nicosulfuron + rimsulfuron + safener	Corn3, 5, 15
Stinger	clopyralid	SG14
Strategy Premix	ethalfluralin + clomazone	MELN2, 2b
SureStart Premix	acetochlor + clopyralid + flumetsulam	Corn2, 15
Synchrony STS Premix	chlorimuron + thifensulfuron	DSB1a
Touchdown HiTech	glyphosate	Corn11, 11b, 12; Soy11
Touchdown Total	glyphosate	Corn6; DSB2; Soy2
Valor SX	flumioxazin	Corn1; SG3; Soy7, 8, 9, 10; Brndwn2; Pea1
Valor XLT Premix	flumioxazin + chlorimuron	DSB1a, 2, 3; Soy1, 2, 6, 12
Verdict Premix	saflufenacil + dimethenamid-p	Corn9a, 9b, 15, 19; SCR2
Vida	pyraflufen	Bean8

<u>Trade Name</u>	<u>Common Name</u>	<u>Trial</u>
Warrant	acetochlor	Soy8
Zidua	pyroxasulfone	Corn19; SCR2; Soy1, 7, 8, 9, 10; Bean5
2,4-D amine	2,4-D amine	Corn2; SCR2; SG14; Soy4, 5
2,4-D ester	2,4-D ester	Corn1, 12, 20; DSB2, 3; Soy6

Daily Temperature Record
October 2010 - September 2011
 University of Delaware, Research and Education Center
 Georgetown, Delaware

	2010																							
	Oct		Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sept	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
1	77	56	51	34	65	37	56	35	36	31	48	28	46	37	65	42	91	69	86	58	93	71	81	55
2	69	47	51	31	42	27	56	35	62	33	56	28	52	34	77	52	86	61	89	58	89	68	77	56
3	60	48	56	33	40	30	35	25	35	27	36	25	56	39	82	60	78	53	89	70	81	71	83	59
4	57	51	57	46	40	28	41	24	39	23	47	23	79	45	68	48	81	49	90	71	79	65	85	66
5	59	47	55	38	38	30	40	22	55	35	63	38	70	41	65	44	77	62	90	71	83	61	85	69
6	62	42	52	35	37	29	37	20	42	39	60	42	58	31	70	45	82	58	86	67	86	64	75	65
7	73	51	49	34	34	27	36	23	52	27	48	35	63	42	71	50	86	61	93	69	88	75	86	70
8	75	48	58	38	34	23	31	23	42	26	47	27	52	41	72	45	95	68	88	70	91	72	76	70
9	79	53	58	40	34	17	31	21	33	15	48	29	56	41	72	44	97	72	87	70	92	68	77	68
10	79	48	57	40	41	17	32	17	30	13	58	48	68	46	73	46	91	70	90	64	88	65	83	68
11	85	60	53	32	51	22	31	16	43	10	51	42	77	52	67	45	88	69	90	67	86	62	84	64
12	81	59	59	32	59	46	32	26	46	22	57	36	73	49	74	44	86	67	91	75	87	58	84	61
13	68	48	61	32	46	21	32	23	51	28	58	38	61	48	70	49	78	60	90	70	83	60	85	58
14	60	44	64	30	26	20	32	20	66	42	51	30	68	47	65	55	74	54	80	62	80	68	87	62
15	63	49	63	40	29	20	42	19	43	21	51	28	59	41	79	63	81	56	82	57	83	68	85	55
16	65	47	63	49	24	15	38	24	53	19	56	44	64	46	78	61	82	56	83	56	81	65	65	46
17	72	41	66	47	33	15	36	27	66	41	62	42	63	50	73	61	84	65	87	64	87	61	64	49
18	67	43	55	39	34	14	43	33	72	51	78	48	74	47	71	57	88	63	89	67	88	66	65	55
19	60	48	51	31	35	26	50	33	60	34	64	40	72	51	75	56	82	66	93	73	85	65	69	48
20	54	47	62	35	35	23	43	29	46	29	48	29	84	51	70	55	76	61	89	70	86	60	74	54
21	67	41	56	34	38	27	42	21	54	29	63	40	69	43	78	56	83	59	95	72	89	68	76	53
22	57	38	67	38	38	27	23	12	35	23	61	45	50	42	73	57	89	67	101	78	80	59	80	60
23	68	35	69	52	40	31	27	12	44	18	49	41	74	44	83	63	84	72	101	82	80	55	77	61
24	73	55	57	34	38	25	30	8	52	22	41	33	84	63	87	70	87	70	96	73	84	56	73	59
25	74	58	56	39	33	27	49	26	66	36	45	27	84	60	84	67	84	67	87	73	88	69	76	57
26	75	63	63	42	28	23	38	31	47	29	43	32	82	67	90	65	82	64	91	73	85	66	79	58
27	82	70	46	34	32	22	35	29	58	38	45	28	82	66	85	69	84	68	88	70	75	72	81	58
28	78	58	46	26	38	26	38	30	70	46	45	26	81	63	84	64	90	67	91	65	83	65	81	61
29	58	44	52	23	39	17	38	27			50	25	70	50	86	67	86	71	97	74	79	60	81	58
30	58	35	63	45	44	14	42	25			45	31	62	47	94	69	83	64	92	71	79	58	80	54
31	66	46			49	27	33	28			43	39			91	69			93	67	82	53		

Data Collected Midnight- Midnight

Daily Rainfall Record
 October 2010 - September 2011
 University of Delaware, Reserch and Education Center
 Georgetown, Delaware

	2010											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept
1	1.40	0.00	0.32	0.09	0.04	0.00	0.02	0.13	0.00	0.00	0.09	0.00
2	0.00	0.00	0.00	0.14	0.51	0.00	0.00	0.00	0.00	0.00	0.01	0.00
3	0.89	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.01	0.09	0.00
4	0.21	0.72	0.00	0.00	0.00	0.00	0.00	0.75	0.08	0.00	0.05	0.00
5	0.00	0.04	0.00	0.00	0.04	0.00	0.39	0.00	0.02	0.02	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	1.09	0.00	0.00	0.00	0.00	0.00	0.29
7	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.01
8	0.00	0.00	0.00	0.09	0.00	0.00	0.23	0.00	0.00	1.25	0.00	2.60
9	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.06	0.07
10	0.00	0.00	0.00	0.00	0.08	0.84	0.00	0.00	0.62	0.00	0.00	0.00
11	0.00	0.00	0.09	0.01	0.00	0.07	0.00	0.00	0.15	0.00	0.00	0.00
12	0.00	0.00	0.91	0.08	0.00	0.00	0.16	0.00	0.03	0.00	0.00	0.00
13	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.09	0.00
14	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.80	0.00
15	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00
16	0.00	0.09	0.00	0.00	0.00	0.44	1.11	0.19	0.01	0.00	0.01	0.00
17	0.00	0.28	0.15	0.32	0.00	0.00	0.01	0.07	0.21	0.00	0.00	0.24
18	0.00	0.00	0.00	0.65	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.02
19	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.27	0.00	0.17	0.26	0.00
20	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49	0.00	0.00	0.00
21	0.01	0.00	0.00	0.12	0.02	0.23	0.00	0.00	0.00	0.00	0.73	0.00
22	0.00	0.00	0.00	0.00	0.22	0.00	0.09	0.00	0.24	0.00	0.00	0.01
23	0.00	0.00	0.00	0.00	0.00	0.75	0.07	0.00	0.00	0.00	0.00	0.45
24	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.57	0.00	0.03
25	0.00	0.02	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.40	0.37	0.00
26	0.00	0.00	0.00	1.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.47	0.00	0.02	0.12	0.00	0.05	0.00	0.00	0.00	0.00	5.98	0.00
28	0.01	0.00	0.00	0.06	0.80	0.00	0.46	0.05	0.00	0.00	1.07	0.10
29	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.02
30	0.00	0.01	0.00	0.00		0.03	0.00	0.00	0.00	0.00	0.00	0.62
31	0.00		0.00	0.00		0.30		0.00		0.00		
Total	4.21	1.24	1.50	2.79	2.07	3.84	2.67	1.98	1.85	2.50	9.61	4.46

Total for Period 38.72 Inches
 Data Collected Midnight- Midnight
 Measurements shown in Inches

Daily Irrigation Record (Inches H₂O)

April-September 2011

University of Delaware, Research and Education Center
Georgetown, Delaware

	May Field 14/18^	June Field 14/18^	July Field 14/18^	Aug. Field 14/18^	Sept. Field 14/18^
1					
2			0.5		
3				0.5	
4					
5			0.5	0.3	
6					
7		0.5			
8			0.5		
9					
10					
11	0.5				
12					
13			0.5		
14		0.5			
15			0.5		
16		0.5			
17					
18			0.5		
19					
20					
21					
22					
23					
24					
25					
26					
27	0.5				
28		0.5	0.5		
29					
30					
31					
Total	1.0	2.0	3.5	0.8	0.0

^Field 14/18 applies to Corn3, 5, 6, 7, 8, 9a, 10a, 14, 15, 16, 17, 18, 19; SCR2, 3, 4; DSB1a; Soy7, 8, 9, 10; Bean3, 4, 5, 6, 8.

Fall Burndown for Field Corn

Trial ID: Corn1-11 Cooperator: Bayer
 Location: Field #36 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Annual Ryegrass (volunteer)	LOLMU	Lolium multiflorum Lam.
2.	Annual Ryegrass (overseeded)	LOLMU	Lolium multiflorum Lam.
3.	Henbit	LAMAM	Lamium amplexicaule L.

Crop 1: Field Corn **ZEAMX** **Variety:** H5461VT3
Planting Date: 04/26/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 18000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Firm
Soil Temperature: 80 F **Soil Moisture:** Moist **Emergence Date:** 05/05/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Soybean Stubble

Trial Initiation Comments: Annual Ryegrass at 15 lb/A was broadcast seeded on 10-26-10.

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 30 gal/A 30% UAN solution (98 lb N) at layby. Total N applied was 123 lb/A.

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	04/29/11	Roundup WeatherMax	4.5	AS	1	qt/A
2.	04/29/11	Lumax	3.95	SC	2.5	qt/A

SOIL DESCRIPTION

% Sand: 77 **% OM:** 2.3 **Texture:** sandy loam
% Silt: 12 **pH:** 5.7
% Clay: 11 **CEC:** 6.7 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book

Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown

Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	11/29/10
Time of Day:	1:00 pm
Application Method:	Spray
Application Timing:	Fall
Applic. Placement:	Brdcst
Air Temp., Unit:	65 F
% Relative Humidity:	35
Wind Velocity, Unit:	2 mph
Wind Direction:	East
Dew Presence (Y/N):	N
Soil Temp., Unit:	56 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	5

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	LOLMU
Growth Stage:	2-5 tiller
Height, Unit:	3 in
Density,Unit:	0-10 m2
Weed 2 Code:	LOLMU
Growth Stage:	2-leaf
Height, Unit:	2.5 in
Density,Unit:	100 m2
Weed 3 Code:	LAMAM
Growth Stage:	vegetative
Height, Unit:	1.5 in
Density,Unit:	15-50 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Backpack
Operating Pressure:	31 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	18 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	CO2

Trial Comments

12-22-2010; Winter annual broadleaf species include jagged chickweed, purple deadnettle, redstem filaree, and field pansy.

4-6-2011: Annual ryegrass and deadnettle were the two most abundant species. Other species include: mouseear chickweed, common chickweed, jagged chickweed, cress, primrose, field pansy. Chamomille and purslane speedwell were found occasionally.

Treatment 3, rep 2, only 85% control of field pansy; Treatment 5, rep 3, 97% control of chamomille
Treatment 6, no control of jagged chickweed; chamomille only 60% in rep 3, and horseweed was 90% control in rep 2.

4-25-2011; All treatments have common lambsquarters seedlings and some common ragweed (no treatment effect). Only winter annuals were rated in overall control.

Fall Burndown for Field Corn							LOLMU	ANNBR	TTTTT	LOLMU	ANNBR
Weed Code							Annual	Wntr Ann	All	Annual	Wntr Ann
Weed or Crop Name							Ryegrass	Broadlvs	Species	Ryegrass	Broadlvs
Rating Data Type							Control	Control	Control	Control	Control
Rating Unit							%	%	%	%	%
Rating Date							12/22/10	12/22/10	04/06/11	04/06/11	04/25/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Untreated Check						0.0 c	0.0 c	0.0 c	0.0 c	0.0 c
2	Autumn.....iodosulfuron	10 WG		.00187 lb ai/A	Fall	A	50.0 b	66.7 b	98.0 a	95.0 ab	88.3 a
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	Fall	A					
	Crop Oil Concentrate	100 L		1 % v/v	Fall	A					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	Fall	A					
3	IMS + TCM	51 WG		0.016 lb ai/A	Fall	A	10.0 c	63.3 b	98.3 a	91.7 ab	91.0 a
	2,4-D ester	3.8 L		0.475 lb ae/A	Fall	A					
	Crop Oil Concentrate	100 L		1 % v/v	Fall	A					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	Fall	A					
4	IMS + TCM	51 WG		0.016 lb ai/A	Fall	A	63.3 ab	65.0 b	100.0 a	100.0 a	97.3 a
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	Fall	A					
	Crop Oil Concentrate	100 L		1 % v/v	Fall	A					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	Fall	A					
5	IMS + TCM	51 WG		0.016 lb ai/A	Fall	A	73.3 a	68.3 b	99.7 a	100.0 a	95.0 a
	Metribuzin.....metribuzin	75 DF		0.28 lb ai/A	Fall	A					
	Crop Oil Concentrate	100 L		1 % v/v	Fall	A					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	Fall	A					
6	Valor SX.....flumioxazin	51 WG		0.096 lb ai/A	Fall	A	83.3 a	88.3 a	76.7 b	76.7 b	63.3 b
	Crop Oil Concentrate	100 L		1 % v/v	Fall	A					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	Fall	A					
LSD (P=.05)							23.31	8.73	5.36	21.63	19.41
Standard Deviation							12.81	4.80	2.95	11.89	10.67
CV							27.46	8.19	3.74	15.4	14.72
Replicate F							0.025	4.036	0.179	0.422	0.023
Replicate Prob(F)							0.9750	0.0519	0.8387	0.6666	0.9769
Treatment F							21.442	118.181	542.005	31.937	37.181
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							LAMAM	VIORA	HLOUM	ERICA	VERPG
Weed or Crop Name							Henbit	Field	Jagged	Horse-	Purslane
Weed or Crop Name							Control	Pansy	Chickwd	weed	Speedwl
Rating Data Type							%	Control	Control	Control	Control
Rating Unit							%	%	%	%	%
Rating Date							04/25/11	04/25/11	04/25/11	04/25/11	04/25/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Untreated Check						0.0c	0.0b	0.0c	0.0c	0.0b
2	Autumn.....iodosulfuron	10	WG	.00187 lb ai/A	Fall	A	73.3b	83.3a	80.0ab	100.0a	80.0a
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	Fall	A					
	Crop Oil Concentrate	100	L	1 % v/v	Fall	A					
	Dry Ammonium Sulfate	100	D	1.02 % w/v	Fall	A					
3	IMS + TCM	51	WG	0.016 lb ai/A	Fall	A	95.0a	78.3a	96.0a	100.0a	100.0a
	2,4-D ester	3.8	L	0.475 lb ae/A	Fall	A					
	Crop Oil Concentrate	100	L	1 % v/v	Fall	A					
	Dry Ammonium Sulfate	100	D	1.02 % w/v	Fall	A					
4	IMS + TCM	51	WG	0.016 lb ai/A	Fall	A	96.7a	100.0a	96.0a	98.3a	100.0a
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	Fall	A					
	Crop Oil Concentrate	100	L	1 % v/v	Fall	A					
	Dry Ammonium Sulfate	100	D	1.02 % w/v	Fall	A					
5	IMS + TCM	51	WG	0.016 lb ai/A	Fall	A	96.7a	78.3a	100.0a	100.0a	100.0a
	Metribuzin.....metribuzin	75	DF	0.28 lb ai/A	Fall	A					
	Crop Oil Concentrate	100	L	1 % v/v	Fall	A					
	Dry Ammonium Sulfate	100	D	1.02 % w/v	Fall	A					
6	Valor SX.....flumioxazin	51	WG	0.096 lb ai/A	Fall	A	100.0a	100.0a	33.3bc	63.3b	100.0a
	Crop Oil Concentrate	100	L	1 % v/v	Fall	A					
	Dry Ammonium Sulfate	100	D	1.02 % w/v	Fall	A					
	LSD (P=.05)						17.07	29.29	54.93	22.87	25.73
	Standard Deviation						9.38	16.10	30.20	12.57	14.14
	CV						12.2	21.95	44.7	16.34	17.68
	Replicate F						0.678	0.981	0.077	0.958	1.000
	Replicate Prob(F)						0.5294	0.4084	0.9264	0.4163	0.4019
	Treatment F						51.574	16.090	5.633	30.968	24.000
	Treatment Prob(F)						0.0001	0.0002	0.0100	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							OEOLA	LOLMU
Weed or Crop Name							Cutleaf	Annual
Weed or Crop Name							EPrimrse	Ryegrass
Rating Data Type							Control	Control
Rating Unit							%	%
Rating Date							04/25/11	04/25/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code		
1	Untreated Check						0.0 b	0.0 b
2	Autumn.....iodosulfuron	10 WG		.00187 lb ai/A	Fall	A	100.0 a	86.7 a
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	Fall	A		
	Crop Oil Concentrate	100 L		1 % v/v	Fall	A		
	Dry Ammonium Sulfate	100 D		1.02 % w/v	Fall	A		
3	IMS + TCM	51 WG		0.016 lb ai/A	Fall	A	100.0 a	88.0 a
	2,4-D ester	3.8 L		0.475 lb ae/A	Fall	A		
	Crop Oil Concentrate	100 L		1 % v/v	Fall	A		
	Dry Ammonium Sulfate	100 D		1.02 % w/v	Fall	A		
4	IMS + TCM	51 WG		0.016 lb ai/A	Fall	A	96.7 a	97.3 a
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	Fall	A		
	Crop Oil Concentrate	100 L		1 % v/v	Fall	A		
	Dry Ammonium Sulfate	100 D		1.02 % w/v	Fall	A		
5	IMS + TCM	51 WG		0.016 lb ai/A	Fall	A	100.0 a	92.7 a
	Metribuzin.....metribuzin	75 DF		0.28 lb ai/A	Fall	A		
	Crop Oil Concentrate	100 L		1 % v/v	Fall	A		
	Dry Ammonium Sulfate	100 D		1.02 % w/v	Fall	A		
6	Valor SX.....flumioxazin	51 WG		0.096 lb ai/A	Fall	A	100.0 a	89.3 a
	Crop Oil Concentrate	100 L		1 % v/v	Fall	A		
	Dry Ammonium Sulfate	100 D		1.02 % w/v	Fall	A		
LSD (P=.05)							4.29	18.21
Standard Deviation							2.36	10.01
CV							2.85	13.23
Replicate F							1.000	1.658
Replicate Prob(F)							0.4019	0.2389
Treatment F							889.000	41.566
Treatment Prob(F)							0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Control in No-Till Field Corn

Trial ID: Corn2-11 Cooperator: FMC, Dow
 Location: Field #7 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947
Investigator: Mark VanGessel

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Mouseear Chickweed	CERVU	Cerastium vulgatum L.
2.	Field Pansy	VIORA	Viola rafinesquii Greene
3.	Horseweed	ERICA	Erigeron canadensis L.
4.	Cutleaf Evening Primrose	OEOLA	Oenothera laciniata Hill
5.	Pigweed Species	AMASS	Amaranthus sp.

Crop 1: Field Corn **ZEAMX** **Variety:** H5707VTS
Planting Date: 05/19/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 19000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Firm/Trashy
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/25/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Corn Stubble

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 30 gal/A 30% UAN solution (98 lb N) at layby. Total N applied was 123 lb/A.

SOIL DESCRIPTION

% Sand: 78 **% OM:** 1.9 **Texture:** sandy loam
% Silt: 13 **pH:** 5.5
% Clay: 9 **CEC:** 5.7 **Fert. Level:** Medium
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown

APPLICATION DESCRIPTION

	A	B	C	D	E
Application Date:	04/29/11	05/11/11	05/19/11	06/02/11	06/08/11
Time of Day:	9:00 am	9:15 am	12:00 pm	9:30 am	3:00 pm
Application Method:	Spray	Spray	Spray	Spray	Spray
Application Timing:	21EPP	7EPP	PRE	V1-3	V4-5
Applic. Placement:	Brdcst	Brdcst	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	63 F	60 F	72 F	78 F	92 F
% Relative Humidity:	52	65	66	31	38
Wind Velocity, Unit:	2 mph	3 mph	2 mph	6 mph	4 mph
Wind Direction:	Northwest	Northeast	Southwest	Northwest	West
Dew Presence (Y/N):	Y	N	N	N	N
Soil Temp., Unit:	58 F	58 F	71 F	77 F	89 F
Soil Surf. Moisture:	Moist	Dry	Moist	Dry	Dry
Root Zone Moisture:	Moist	Moist	Moist	Dry	Dry
Leaf Surf. Moisture:	Moist	Dry	Dry	Dry	Dry
% Cloud Cover:	0	5	85	0	0

CROP STAGE AT EACH APPLICATION					
	A	B	C	D	E
Crop 1 Code:	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Growth Stage:				V3	V5
Height, Unit:				5 in	13 in
Crop Health:				Good	MoistStrs

WEED STAGE AT EACH APPLICATION					
	A	B	C	D	E
Weed 1 Code:	CERVU	CERVU	CERVU	CERVU	CERVU
Growth Stage:	seed	seed	seed		
Height, Unit:	8 in	8 in	8 in		
Density,Unit:	175 m2	175 m2	175 m2		
Weed 2 Code:	VIORA	VIORA	VIORA	VIORA	VIORA
Growth Stage:	flower	late flwr	seed		
Height, Unit:	9 in	9 in	9 in		
Density,Unit:	0-60 m2	0-60 m2	0-60 m2		
Weed 3 Code:	ERICA	ERICA	ERICA	ERICA	ERICA
Growth Stage:	early bolt	bolting	bolting		
Height, Unit:	2 in	6 in	8 in		
Density,Unit:	0-10 m2	0-10 m2	0-10 m2		
Weed 4 Code:	OEOLA	OEOLA	OEOLA	OEOLA	OEOLA
Growth Stage:	early bolt	bolting	bolting		
Height, Unit:	3 in	6 in	7 in		
Density,Unit:	0-60 m2	0-60 m2	0-60 m2		
Weed 5 Code:	AMASS	AMASS	AMASS	AMASS	AMASS
Growth Stage:				vegetative	vegetative
Height, Unit:				4 in	6 in
Density,Unit:				30-100 m2	0-100 m2

APPLICATION EQUIPMENT					
	A	B	C	D	E
Appl. Equipment:	Tractor	Tractor	Tractor	Tractor	Tractor
Operating Pressure:	40 psi	40 psi	40 psi	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002	11002	11002
Nozzle Spacing, Unit:	20 in	20 in	20 in	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	26 in	26 in	26 in	26 in	28 in
Ground Speed, Unit:	3 mph	3 mph	3 mph	3 mph	3 mph
Carrier:	water	water	water	water	water
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air	Comp. Air	Comp. Air	Comp. Air

Trt No	Treatment Application Comment
10	Plots may have been undertreated due to malfunction wiith can.

Trial Comments

6/5/11 - Untreated Check - Horseweed, primrose, and chickweed. (Rabbitfoot clover and field pansy were sporadic)

Treatments 2 & 3 - Poor to no chickweed control

Treatment 4 - Poor rabbitfoot clover control, fair horseweed control.

Treatments 5 & 7 - Good rabbitfoot clover and chickweed control

Treatment 10 - Poor to no control of primrose, horseweed, rabbitfoot clover, chickweed, and field pansy control. There was an application issue with can function.

Due to drought, plots without excellent control were stunted, and made injury ratings useless to collect.

In plots with poor control prior to planting, (burndown) few weeds have emerged due to dry conditions (treatments 3, 2, 10) so weed control values are skewed in these plots

Injury (flecking) in treatment 4:

<u>Rep 1</u>	<u>Rep 2</u>	<u>Rep 3</u>
10	5	15

No injury observed in treatments 5 and 7.

7/5/11 - Plot 302 - Severe stunting of the corn.

Rating scale for spurred anoda is 0= absent; 1= present; and 2= little to no control

Weed Control in No-Till Field Corn							ANNBR	AMASS	IPOSS	DIGSS	AMASS
Trial ID: Corn2-11 Cooperator: FMC, Dow							WntrAnn	Pigweed	Morngrly	Crabgras	Pigweed
Location: Field #7 Investigator: Mark VanGessel							Broadlvs	Species	Species	Species	Species
Weed Code							Burndown	Control	Control	Control	Control
Weed or Crop Name							%	%	%	%	%
Weed or Crop Name							06/05/11	06/05/11	06/05/11	06/05/11	07/05/11
Rating Data Type											
Rating Unit											
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg					
1	Untreated Check						0.0d	0.0d	0.0b	0.0c	0.0e
2	Gramoxone Inteon..paraquat	2SL		0.5 lb ai/A		7EPP B	65.0 bc	100.0 a	93.3 a	100.0 a	99.7 a
	Rage D-Tech Premix	6EC		0.75 lb ai/A		7EPP B					
	Nonionic Surfactant	100L		0.25 % v/v		7EPP B					
	F-9310-6	2SE		0.14 lb ai/A		PRE C					
	Atrazine 4L	4L		1.5 lb ai/A		PRE C					
	Roundup PowerMax..glyphosate	4.5AS		0.77 lb ae/A		V4-5 E					
	Dry Ammonium Sulfate	100D		1.5 % w/v		V4-5 E					
3	Gramoxone Inteon..paraquat	2SL		0.5 lb ai/A		PRE C	53.3 c	100.0 a	100.0 a	100.0 a	95.0 a
	F-9310-6	2SE		0.14 lb ai/A		PRE C					
	Atrazine 4L	4L		1.5 lb ai/A		PRE C					
	Nonionic Surfactant	100L		0.25 % v/v		PRE C					
	Roundup PowerMax..glyphosate	4.5AS		0.77 lb ae/A		V4-5 E					
	Dry Ammonium Sulfate	100D		1.5 % w/v		V4-5 E					
4	Gramoxone Inteon..paraquat	2SL		0.5 lb ai/A		21EPP A	80.0 ab	0.0 d	0.0 b	0.0 c	92.0 a
	Rage D-Tech Premix	6EC		0.75 lb ai/A		21EPP A					
	Nonionic Surfactant	100L		0.25 % v/v		21EPP A					
	F-9310-6	2SE		0.125 lb ai/A		V1-3 D					
	Atrazine 4L	4L		1 lb ai/A		V1-3 D					
	Roundup PowerMax..glyphosate	4.5AS		0.77 lb ae/A		V1-3 D					
	Dry Ammonium Sulfate	100D		1.5 % w/v		V1-3 D					
	Roundup PowerMax..glyphosate	4.5AS		0.77 lb ae/A		V4-5 E					
	Dry Ammonium Sulfate	100D		1.5 % w/v		V4-5 E					
5	Gramoxone Inteon..paraquat	2SL		0.5 lb ai/A		21EPP A	81.7 ab	0.0 d	0.0 b	0.0 c	83.7 ab
	Rage D-Tech Premix	6EC		0.75 lb ai/A		21EPP A					
	Nonionic Surfactant	100L		0.25 % v/v		21EPP A					
	Halex GT Premix	4.38 SC		1.97 lb ai/A		V1-3 D					
	Dry Ammonium Sulfate	100D		1.5 % w/v		V1-3 D					
	Roundup PowerMax..glyphosate	4.5AS		0.77 lb ae/A		V4-5 E					
	Dry Ammonium Sulfate	100D		1.5 % w/v		V4-5 E					

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						ANNBR	AMASS	IPOSS	DIGSS	AMASS		
Weed or Crop Name						WntrAnn	Pigweed	Morngly	Crabgras	Pigweed		
Weed or Crop Name						Broadlvs	Species	Species	Species	Species		
Rating Data Type						Burndown	Control	Control	Control	Control		
Rating Unit						%	%	%	%	%		
Rating Date						06/05/11	06/05/11	06/05/11	06/05/11	07/05/11		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Grow Stg	Appl Code					
6	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A		21EPP	A	81.7 ab	0.0 d	0.0 b	0.0 c	89.0 a
	Rage D-Tech Premix	6	EC	0.75 lb ai/A		21EPP	A					
	Nonionic Surfactant	100	L	0.25 % v/v		21EPP	A					
	Halex GT Premix	4.38	SC	1.97 lb ai/A		V1-3	D					
	Atrazine 4L	4	L	1 lb ai/A		V1-3	D					
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A		V1-3	D					
	Dry Ammonium Sulfate	100	D	1.5 % w/v		V1-3	D					
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A		V4-5	E					
	Dry Ammonium Sulfate	100	D	1.5 % w/v		V4-5	E					
7	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A		21EPP	A	75.0 ab	0.0 d	0.0 b	0.0 c	43.3 d
	Rage D-Tech Premix	6	EC	0.75 lb ai/A		21EPP	A					
	Nonionic Surfactant	100	L	0.25 % v/v		21EPP	A					
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A		V1-3	D					
	Dry Ammonium Sulfate	100	D	1.5 % w/v		V1-3	D					
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A		V4-5	E					
	Dry Ammonium Sulfate	100	D	1.5 % w/v		V4-5	E					
8	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A		21EPP	A	90.0 a	43.3 c	6.7 b	83.3 b	61.7 c
	2,4-D amine	3.8	L	0.475 lb ae/A		21EPP	A					
	SureStart Premix	4.25	SE	1.6 lb ai/A		21EPP	A					
	Nonionic Surfactant	100	L	0.25 % v/v		21EPP	A					
	Durango DMA.....glyphosate	4	SL	0.75 lb ae/A		V4-5	E					
9	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A		21EPP	A	90.0 a	65.0 b	95.0 a	87.3 ab	68.3 bc
	2,4-D amine	3.8	L	0.475 lb ae/A		21EPP	A					
	SureStart Premix	4.25	SE	1.6 lb ai/A		21EPP	A					
	Atrazine 4L	4	L	1.5 lb ai/A		21EPP	A					
	Nonionic Surfactant	100	L	0.25 % v/v		21EPP	A					
	Durango DMA.....glyphosate	4	SL	0.75 lb ae/A		V4-5	E					
10	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A		PRE	C		100.0 a	100.0 a	100.0 a	62.7 c
	2,4-D amine	3.8	L	0.475 lb ae/A		PRE	C					
	SureStart Premix	4.25	SE	1.06 lb ai/A		PRE	C					
	Atrazine 4L	4	L	1 lb ai/A		PRE	C					
	Nonionic Surfactant	100	L	0.25 % v/v		PRE	C					
	Durango DMA.....glyphosate	4	SL	0.75 lb ae/A		V4-5	E					
LSD (P=.05)						17.55	12.16	8.56	12.81	16.47		
Standard Deviation						10.14	7.09	4.99	7.47	9.60		
CV						14.8	17.36	12.63	15.87	13.81		
Replicate F						4.390	0.116	0.703	1.033	2.614		
Replicate Prob(F)						0.0302	0.8911	0.5084	0.3760	0.1008		
Treatment F						23.268	128.812	296.807	133.968	29.899		
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	0.0001		

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							IPOSS	ANVCR	
Weed or Crop Name							Morning	Spurred	
Weed or Crop Name							Species	Anoda	
Rating Data Type							Control	0=absnt	
Rating Unit							%	1=prsnt	
Rating Date							07/05/11	07/05/11	
Trt	Treatment	Form	Form	Rate	Grow	Appl			
No.	Name	Conc	Type	Rate	Unit	Stg	Code		
1	Untreated Check							0.0 d	0.0 c
2	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A	7EPP	B		88.7 ab	1.3 ab
	Rage D-Tech Premix	6	EC	0.75 lb ai/A	7EPP	B			
	Nonionic Surfactant	100	L	0.25 % v/v	7EPP	B			
	F-9310-6	2	SE	0.14 lb ai/A	PRE	C			
	Atrazine 4L	4	L	1.5 lb ai/A	PRE	C			
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	V4-5	E			
	Dry Ammonium Sulfate	100	D	1.5 % w/v	V4-5	E			
3	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A	PRE	C		76.0 bc	1.7 ab
	F-9310-6	2	SE	0.14 lb ai/A	PRE	C			
	Atrazine 4L	4	L	1.5 lb ai/A	PRE	C			
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	C			
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	V4-5	E			
	Dry Ammonium Sulfate	100	D	1.5 % w/v	V4-5	E			
4	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A	21EPP	A		94.0 a	1.3 ab
	Rage D-Tech Premix	6	EC	0.75 lb ai/A	21EPP	A			
	Nonionic Surfactant	100	L	0.25 % v/v	21EPP	A			
	F-9310-6	2	SE	0.125 lb ai/A	V1-3	D			
	Atrazine 4L	4	L	1 lb ai/A	V1-3	D			
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	V1-3	D			
	Dry Ammonium Sulfate	100	D	1.5 % w/v	V1-3	D			
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	V4-5	E			
	Dry Ammonium Sulfate	100	D	1.5 % w/v	V4-5	E			
5	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A	21EPP	A		80.4 abc	1.7 ab
	Rage D-Tech Premix	6	EC	0.75 lb ai/A	21EPP	A			
	Nonionic Surfactant	100	L	0.25 % v/v	21EPP	A			
	Halex GT Premix	4.38	SC	1.97 lb ai/A	V1-3	D			
	Dry Ammonium Sulfate	100	D	1.5 % w/v	V1-3	D			
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	V4-5	E			
	Dry Ammonium Sulfate	100	D	1.5 % w/v	V4-5	E			

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							IPOSS	ANVCR	
Weed or Crop Name							Morningly	Spurred	
Weed or Crop Name							Species	Anoda	
Rating Data Type							Control	0=absnt	
Rating Unit							%	1=prsnt	
Rating Date							07/05/11	07/05/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code		
6	Gramoxone Inteon..paraquat	2	SL	0.5 lb	ai/A	21EPP	A	86.0 abc	1.3 ab
	Rage D-Tech Premix	6	EC	0.75 lb	ai/A	21EPP	A		
	Nonionic Surfactant	100	L	0.25 %	v/v	21EPP	A		
	Halex GT Premix	4.38	SC	1.97 lb	ai/A	V1-3	D		
	Atrazine 4L	4	L	1 lb	ai/A	V1-3	D		
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	V1-3	D		
	Dry Ammonium Sulfate	100	D	1.5 %	w/v	V1-3	D		
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	V4-5	E		
	Dry Ammonium Sulfate	100	D	1.5 %	w/v	V4-5	E		
7	Gramoxone Inteon..paraquat	2	SL	0.5 lb	ai/A	21EPP	A	71.6 c	1.7 ab
	Rage D-Tech Premix	6	EC	0.75 lb	ai/A	21EPP	A		
	Nonionic Surfactant	100	L	0.25 %	v/v	21EPP	A		
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	V1-3	D		
	Dry Ammonium Sulfate	100	D	1.5 %	w/v	V1-3	D		
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	V4-5	E		
	Dry Ammonium Sulfate	100	D	1.5 %	w/v	V4-5	E		
8	Gramoxone Inteon..paraquat	2	SL	0.5 lb	ai/A	21EPP	A	85.3 abc	1.0 b
	2,4-D amine	3.8	L	0.475 lb	ae/A	21EPP	A		
	SureStart Premix	4.25	SE	1.6 lb	ai/A	21EPP	A		
	Nonionic Surfactant	100	L	0.25 %	v/v	21EPP	A		
	Durango DMA.....glyphosate	4	SL	0.75 lb	ae/A	V4-5	E		
9	Gramoxone Inteon..paraquat	2	SL	0.5 lb	ai/A	21EPP	A	82.2 abc	1.7 ab
	2,4-D amine	3.8	L	0.475 lb	ae/A	21EPP	A		
	SureStart Premix	4.25	SE	1.6 lb	ai/A	21EPP	A		
	Atrazine 4L	4	L	1.5 lb	ai/A	21EPP	A		
	Nonionic Surfactant	100	L	0.25 %	v/v	21EPP	A		
	Durango DMA.....glyphosate	4	SL	0.75 lb	ae/A	V4-5	E		
10	Gramoxone Inteon..paraquat	2	SL	0.5 lb	ai/A	PRE	C	86.7 ab	2.0 a
	2,4-D amine	3.8	L	0.475 lb	ae/A	PRE	C		
	SureStart Premix	4.25	SE	1.06 lb	ai/A	PRE	C		
	Atrazine 4L	4	L	1 lb	ai/A	PRE	C		
	Nonionic Surfactant	100	L	0.25 %	v/v	PRE	C		
	Durango DMA.....glyphosate	4	SL	0.75 lb	ae/A	V4-5	E		
LSD (P=.05)							14.87	0.72	
Standard Deviation							8.36	0.42	
CV							11.13	30.85	
Replicate F							4.534	9.750	
Replicate Prob(F)							0.0341	0.0014	
Treatment F							31.622	5.188	
Treatment Prob(F)							0.0001	0.0015	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Postemergence Weed Control in Glyphosate-tolerant Field Corn

Trial ID: Corn3-11 Cooperator: Bayer
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947
Investigator: Mark VanGessel

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Morningglory Species	IPOSS	Ipomoea sp.
2.	Palmer Amaranth	AMAPA	Amaranthus palmeri S.Wats.
3.	Annual Grasses	GGGAN	
4.	Common Ragweed	AMBEL	Ambrosia artemisifolia L.

Crop 1: Field Corn **ZEAMX** **Variety:** H5753VTS
Planting Date: 05/06/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Medium
Soil Temperature: 70 F **Soil Moisture:** Moist **Emergence Date:** 05/14/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.

SOIL DESCRIPTION

% Sand: 81 **% OM:** 1.2 **Texture:** loamy sand
% Silt: 12 **pH:** 5.9
% Clay: 7 **CEC:** 4.5 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	05/18/11	05/25/11
Time of Day:	3:30 pm	11:00 am
Application Method:	Spray	Spray
Application Timing:	V1	V2-3
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	70 F	80 F
% Relative Humidity:	78	60
Wind Velocity, Unit:	5 mph	2 mph
Wind Direction:	Southeast	East
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	70 F	79 F
Soil Surf. Moisture:	Moist	Dry
Root Zone Moisture:	Moist	Moist
Leaf Surf. Moisture:	Dry	Dry
% Cloud Cover:	100	20

CROP STAGE AT EACH APPLICATION		
	A	B
Crop 1 Code:	ZEAMX	ZEAMX
Growth Stage:	V1	V3
Height, Unit:	2 in	7 in
Crop Health:	Good	Good

WEED STAGE AT EACH APPLICATION		
	A	B
Weed 1 Code:	IPOSS	IPOSS
Growth Stage:	cotyledon	cot-3 lf
Height, Unit:	1 in	1.7 in
Density,Unit:	5-10 m2	1-15 m2
Weed 2 Code:	AMAPA	AMAPA
Growth Stage:		vegetative
Height, Unit:		3 in
Density,Unit:		50-150 m2
Weed 3 Code:	GGGAN	GGGAN
Growth Stage:		3lf-1 til
Height, Unit:		3.5 in
Density,Unit:		0-80 m2
Weed 4 Code:	AMBEL	AMBEL
Growth Stage:		4-6 leaf
Height, Unit:		1.5 in
Density,Unit:		0-5 m2

APPLICATION EQUIPMENT		
	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	20 in	24 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air

Trial Comments

6/3/11 - Rated POST activity only. Some Morningglory cotyledons are emerging.

Postemergence Weed Control in Glyphosate-tolerant Field Corn												
Trial ID: Corn3-11 Cooperator: Bayer												
Location: Field #14 Investigator: Mark VanGessel												
Weed Code						ZEAMX	AMASS	AMBEL	IPOSS	GGGAN		
Crop Code						Field	Pigweed	Common	Morngrly	Annual		
Weed or Crop Name						Corn	Species	Ragweed	Species	Grasses		
Weed or Crop Name						Stunting	Control	Control	Control	Control		
Rating Data Type						%	%	%	%	%		
Rating Unit						06/03/11	06/03/11	06/03/11	06/03/11	06/03/11		
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code					
1	Untreated Check							0.0a	0.0b	0.0c	0.0d	0.0f
2	Capreno Premix	3.45	SC	0.081	lb ai/A	V2-3	B	9.7a	99.7a	100.0a	90.0bc	84.3e
	Crop Oil Concentrate	100	L	1%	v/v	V2-3	B					
	Dry Ammonium Sulfate	100	D	1.02%	w/v	V2-3	B					
3	Capreno Premix	3.45	SC	0.081	lb ai/A	V2-3	B	10.0a	100.0a	100.0a	100.0a	100.0a
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	V2-3	B					
	Dry Ammonium Sulfate	100	D	1.02%	w/v	V2-3	B					
4	Capreno Premix	3.45	SC	0.081	lb ai/A	V2-3	B	10.7a	100.0a	100.0a	95.7ab	95.7ab
	Atrazine 4L	4	L	1	lb ai/A	V2-3	B					
	Crop Oil Concentrate	100	L	1%	v/v	V2-3	B					
	Dry Ammonium Sulfate	100	D	1.02%	w/v	V2-3	B					
5	Capreno Premix	3.45	SC	0.081	lb ai/A	V2-3	B	38.0a	100.0a	100.0a	93.0bc	89.7d
	Atrazine 4L	4	L	1	lb ai/A	V2-3	B					
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	V2-3	B					
	Dry Ammonium Sulfate	100	D	1.02%	w/v	V2-3	B					
6	Lumax Premix	3.95	SC	2.47	lb ai/A	V1	A	0.0a	100.0a	100.0a	99.0a	94.7bc
7	Halex GT Premix	4.38	SC	1.97	lb ai/A	V2-3	B	0.0a	100.0a	100.0a	100.0a	99.7a
	Nonionic Surfactant	100	L	0.25%	v/v	V2-3	B					
	Dry Ammonium Sulfate	100	D	1.02%	w/v	V2-3	B					
8	Steadfast Q Premix	75	WG	0.07	lb ai/A	V2-3	B	7.0a	100.0a	91.0b	89.3c	90.0cd
	_isoxadifen-ethyl	50	WG	0.0156	lb ai/A	V2-3	B					
	Atrazine 4L	4	L	0.75	lb ai/A	V2-3	B					
	Nonionic Surfactant	100	L	0.25%	v/v	V2-3	B					
	30% Urea Ammonium Nitrate	100	L	2%	v/v	V2-3	B					
LSD (P=.05)						33.23	0.36	4.91	5.74	4.68		
Standard Deviation						18.97	0.20	2.81	3.28	2.67		
CV						201.49	0.23	3.25	3.93	3.27		
Replicate F						1.058	1.000	1.000	1.058	2.745		
Replicate Prob(F)						0.3734	0.3927	0.3927	0.3735	0.0987		
Treatment F						1.299	89915.298	467.803	321.607	469.712		
Treatment Prob(F)						0.3198	0.0001	0.0001	0.0001	0.0001		

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Weed Code						AMASS	IPOSS
Crop Code							
Weed or Crop Name						Pigweed	Morning
Weed or Crop Name						Species	Species
Rating Data Type						Control	Control
Rating Unit						%	%
Rating Date						06/15/11	06/15/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code	
1	Untreated Check						0.0 b
2	Capreno Premix	3.45	SC	0.081 lb ai/A	V2-3	B	96.7 a
	Crop Oil Concentrate	100	L	1 % v/v	V2-3	B	75.0 a
	Dry Ammonium Sulfate	100	D	1.02 % w/v	V2-3	B	
3	Capreno Premix	3.45	SC	0.081 lb ai/A	V2-3	B	100.0 a
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	V2-3	B	77.7 a
	Dry Ammonium Sulfate	100	D	1.02 % w/v	V2-3	B	
4	Capreno Premix	3.45	SC	0.081 lb ai/A	V2-3	B	100.0 a
	Atrazine 4L	4	L	1 lb ai/A	V2-3	B	82.7 a
	Crop Oil Concentrate	100	L	1 % v/v	V2-3	B	
	Dry Ammonium Sulfate	100	D	1.02 % w/v	V2-3	B	
5	Capreno Premix	3.45	SC	0.081 lb ai/A	V2-3	B	100.0 a
	Atrazine 4L	4	L	1 lb ai/A	V2-3	B	73.3 a
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	V2-3	B	
	Dry Ammonium Sulfate	100	D	1.02 % w/v	V2-3	B	
6	Lumax Premix	3.95	SC	2.47 lb ai/A	V1	A	100.0 a
7	Halex GT Premix	4.38	SC	1.97 lb ai/A	V2-3	B	100.0 a
	Nonionic Surfactant	100	L	0.25 % v/v	V2-3	B	70.7 a
	Dry Ammonium Sulfate	100	D	1.02 % w/v	V2-3	B	
8	Steadfast Q Premix	75	WG	0.07 lb ai/A	V2-3	B	100.0 a
	_isoxadifen-ethyl	50	WG	0.0156 lb ai/A	V2-3	B	77.7 a
	Atrazine 4L	4	L	0.75 lb ai/A	V2-3	B	
	Nonionic Surfactant	100	L	0.25 % v/v	V2-3	B	
	30% Urea Ammonium Nitrate	100	L	2 % v/v	V2-3	B	
LSD (P=.05)						3.58	17.71
Standard Deviation						2.04	10.11
CV						2.34	15.28
Replicate F						1.000	3.510
Replicate Prob(F)						0.3927	0.0581
Treatment F						892.429	21.398
Treatment Prob(F)						0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Morninglory Control in Field Corn

Trial ID: Corn4-11 Cooperator:
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Morninglory Species	IPOSS	Ipomoea sp.
2.	Palmer Amaranth	AMAPA	Amaranthus palmeri S.Wats.

Crop 1: Field Corn **ZEAMX** **Variety:** H5753VTS
Planting Date: 05/12/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Smooth
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/19/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.

SOIL DESCRIPTION

% Sand: 75 **% OM:** 1.2 **Texture:** sandy loam
% Silt: 18 **pH:** 5.9
% Clay: 8 **CEC:** 4.9 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	06/06/11	06/13/11
Time of Day:	12:45 pm	1:00 pm
Application Method:	Spray	Spray
Application Timing:	EPOST	POST
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	77 F	74 F
% Relative Humidity:	54	52
Wind Velocity, Unit:	2 mph	3 mph
Wind Direction:	North	North
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	76 F	74 F
Soil Surf. Moisture:	Dry	Moist
Root Zone Moisture:	Moist	Moist
Leaf Surf. Moisture:	Dry	Dry
% Cloud Cover:	45	20

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code:	ZEAMX	ZEAMX
Growth Stage:	V6	V9
Height, Unit:	12 in	28 in
Crop Health:	Good	Good

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	IPOSS	IPOSS
Growth Stage:	vegetative	running
Height, Unit:	6 in	8 in
Density,Unit:	5-15 m2	5-15 m2
Weed 2 Code:	AMAPA	AMAPA
Growth Stage:	vegetative	vegetative
Height, Unit:	6 in	9 in
Density,Unit:	5-50 m2	5-50 m2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	20 in	20 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air

Trial Comments

6/19/11 - Injury = Leafburn.

Treatment 13: Pigweed was about 85% leafburn but most of the stems were still green and looked like they would not die.

Treatment 2 had excellent control of pigweed > 95%

Treatments 5, 6 & 7 had at least 85% leaf burn of pigweeds.

9/1/11 - Corn fell due to storms and hurricane, making ratings very difficult. Excellent control of Palmer amaranth for all treatments.

Morninglory Control in Field Corn							ZEAMX	AMASS	IPOSS	IPOSS	
Trial ID: Corn4-11 Cooperator:											
Location: Field #14 Investigator: Mark VanGessel											
Weed Code	Crop Code	Weed or Crop Name	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date	Field Corn Leafburn %	Pigweed Species Control %	Morninglory Species Control %	Morninglory Species Control %	
							06/19/11	06/26/11	06/26/11	09/01/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
1	Untreated Check							0.0e	0.0b	0.0f	0.0d
2	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A		POST	B	4.3de	100.0a	63.3e	63.3c
3	Roundup WeatherMax..glyphosate	4.5	AS	1 lb ae/A		POST	B	3.7de	100.0a	76.7cd	74.9bc
4	Roundup WeatherMax..glyphosate HE-111	4.5	AS	0.77 lb ae/A		POST	B	5.3cd	100.0a	65.0de	78.9abc
		100	L	0.625 % v/v		POST	B				
5	Roundup WeatherMax..glyphosate Cadet.....fluthiacet	4.5	AS	0.77 lb ae/A		POST	B	13.0b	100.0a	81.0bc	73.3bc
		0.91	EC	0.0064 lb ai/A		POST	B				
6	Roundup WeatherMax..glyphosate Resource.....flumiclorac	4.5	AS	0.77 lb ae/A		POST	B	20.7a	100.0a	75.0cde	74.9bc
		0.86	EC	0.0403 lb ai/A		POST	B				
7	Roundup WeatherMax..glyphosate Aim.....carfentrazone	4.5	AS	0.77 lb ae/A		POST	B	19.0a	100.0a	93.0ab	81.0abc
		2	EW	0.0156 lb ai/A		POST	B				
8	Roundup WeatherMax..glyphosate Atrazine 4L	4.5	AS	0.77 lb ae/A		POST	B	4.3de	100.0a	75.0cde	74.4bc
		4	L	0.75 lb ai/A		POST	B				
9	Roundup WeatherMax..glyphosate Atrazine 4L	4.5	AS	0.77 lb ae/A		POST	B	7.3cd	99.0a	81.7bc	95.0a
		4	L	1.25 lb ai/A		POST	B				
10	Roundup WeatherMax..glyphosate Status Premix	4.5	AS	0.77 lb ae/A		POST	B	9.7bc	100.0a	81.7bc	95.7a
		56	WG	0.175 lb ai/A		POST	B				
11	Roundup WeatherMax..glyphosate Status Premix	4.5	AS	0.77 lb ae/A		POST	B	6.7cd	99.0a	83.3abc	70.8bc
		56	WG	0.28 lb ai/A		POST	B				
12	Roundup WeatherMax..glyphosate Callisto.....mesotrione	4.5	AS	0.77 lb ae/A		POST	B	7.3cd	100.0a	63.3e	96.2a
		4	SC	0.094 lb ai/A		POST	B				
13	Callisto.....mesotrione Atrazine 4L	4	SC	0.094 lb ai/A		POST	B	6.7cd	99.0a	94.7a	88.9ab
		4	L	0.75 lb ai/A		POST	B				
	Crop Oil Concentrate	100	L	1.25 % v/v		POST	B				
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v		POST	B				
14	Callisto.....mesotrione Atrazine 4L	4	SC	0.094 lb ai/A		EPOST	A	0.0e	100.0a	92.3ab	93.7a
		4	L	0.75 lb ai/A		EPOST	A				
	Crop Oil Concentrate	100	L	1.25 % v/v		EPOST	A				
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v		EPOST	A				
LSD (P=.05)							4.53	1.35	12.97	18.59	
Standard Deviation							2.70	0.80	7.73	10.54	
CV							34.99	0.87	10.54	13.91	
Replicate F							2.422	1.000	4.110	2.592	
Replicate Prob(F)							0.1085	0.3816	0.0281	0.1129	
Treatment F							15.629	3318.795	27.689	15.870	
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Effectiveness of Corn Safeners

Trial ID: Corn5-11 Cooperator:
 Location: Field #18 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Field Corn **ZEAMX** **Variety:** H5707
Planting Date: 05/12/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Smooth
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/19/11

Crop 2: Field Corn **ZEAMX** **Variety:** H5753
Planting Date: 05/12/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Smooth
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/19/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	05/12/11	Bicep II Magnum	5.5	L	1.6	pt/A
2.	06/01/11	Roundup WeatherMax	4.5	AS	32	fl oz/A

SOIL DESCRIPTION

% Sand: 75 **% OM:** 1.2 **Texture:** sandy loam
% Silt: 18 **pH:** 5.9
% Clay: 8 **CEC:** 4.9 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	06/06/11
Time of Day:	12:45 pm
Application Method:	Spray
Application Timing:	POST
Applic. Placement:	Brdcst
Air Temp., Unit:	77 F
% Relative Humidity:	54
Wind Velocity, Unit:	2 mph
Wind Direction:	North
Dew Presence (Y/N):	N
Soil Temp., Unit:	76 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	45

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code:	ZEAMX
Growth Stage:	V6
Height, Unit:	12 in
Crop Health:	Good
Crop 2 Code:	ZEAMX
Growth Stage:	V6
Height, Unit:	12 in
Crop Health:	Good

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	28 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

08/25/11 Good to excellent weed control for all treatments

Effectiveness of Corn Safeners							ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	
Trial ID: Corn5-11 Cooperator:							FldCm	FldCm	FldCm	FldCm	FldCm	FldCm	FldCm
Location: Field #18 Investigator: Mark VanGessel							H5707	H5753	H5707	H5753	H5707	H5753	H5753
Crop Code							Chloross	Chloross	Twisting	Twisting	Stunting	Stunting	
Weed or Crop Name							%	%	%	%	%	%	
Weed or Crop Name							06/08/11	06/08/11	06/08/11	06/08/11	06/13/11	06/13/11	
Rating Data Type													
Rating Unit													
Rating Date													
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg							
1	Untreated Check						0.0 f	0.0 e	0.0 d	0.0 d	0.0 f	0.0 g	
2	Distinct Premix	70	WG	0.525 lb ai/A	POST	A	5.3 ef	4.7 d	43.3 a	28.3 a	10.7 d	8.7 f	
	Nonionic Surfactant	100	L	0.25 % v/v	POST	A							
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A							
3	Status Premix	56	WG	0.525 lb ai/A	POST	A	4.0 ef	4.7 d	30.0 b	17.0 b	8.3 de	9.0 f	
	Nonionic Surfactant	100	L	0.25 % v/v	POST	A							
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A							
4	Resolve.....rimsulfuron	25	WG	0.0312 lb ai/A	POST	A	19.7 ab	12.0 ab	0.0 d	0.0 d	40.0 a	28.3 b	
	Crop Oil Concentrate	100	L	1 % v/v	POST	A							
	30% Urea Ammonium Nitrate	100	L	2 % v/v	POST	A							
5	Resolve.....rimsulfuron	25	WG	0.028 lb ai/A	POST	A	13.0 cd	11.3 abc	0.0 d	0.0 d	43.3 a	33.3 a	
	Harmony GT.....thifensulfuron	75	DF	.00586 lb ai/A	POST	A							
	Crop Oil Concentrate	100	L	1 % v/v	POST	A							
	30% Urea Ammonium Nitrate	100	L	2 % v/v	POST	A							
6	Resolve Q Multi-Pak	22.4	DF	0.035 lb ai/A			14.0 bcd	12.0 ab	0.0 d	0.0 d	18.0 bc	20.0 c	
	_Resolve.....rimsulfuron	25	WG	0.0288 lb ai/A	POST	A							
	_Harmony SG.....thifensulfuron	50	SG	.00625 lb ai/A	POST	A							
	_isoxadifen-ethyl	50	WG	0.0144 lb ai/A	POST	A							
	Crop Oil Concentrate	100	L	1 % v/v	POST	A							
	30% Urea Ammonium Nitrate	100	L	2 % v/v	POST	A							
7	Require Q Multi-Pak	59.19	WG	0.296 lb ai/A			22.3 a	15.7 a	22.3 c	15.7 bc	18.3 bc	18.3 cd	
	_Resolve.....rimsulfuron	25	WG	0.0313 lb ai/A	POST	A							
	_Dicamba XP.....dicamba	70	WG	0.24 lb ai/A	POST	A							
	_isoxadifen-ethyl	50	WG	0.0156 lb ai/A	POST	A							
	Crop Oil Concentrate	100	L	1 % v/v	POST	A							
	30% Urea Ammonium Nitrate	100	L	2 % v/v	POST	A							
8	Resolve.....rimsulfuron	25	WG	0.0312 lb ai/A	POST	A	17.3 abc	11.7 abc	17.3 c	11.7 c	23.3 b	20.7 c	
	Dicamba XP.....dicamba	70	WG	0.24 lb ai/A	POST	A							
	Crop Oil Concentrate	100	L	1 % v/v	POST	A							
	30% Urea Ammonium Nitrate	100	L	2 % v/v	POST	A							
9	Accent SP.....nicosulfuron	75	D	0.0513 lb ai/A	POST	A	9.7 de	7.3 cd	0.0 d	0.0 d	14.0 cd	11.7 ef	
	Crop Oil Concentrate	100	L	1 % v/v	POST	A							
	30% Urea Ammonium Nitrate	100	L	2 % v/v	POST	A							

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

(Corn5-11)

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Crop Code						ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX		
Weed or Crop Name						FldCrn	FldCrn	FldCrn	FldCrn	FldCrn	FldCrn		
Weed or Crop Name						H5707	H5753	H5707	H5753	H5707	H5753		
Rating Data Type						Chloross	Chloross	Twisting	Twisting	Stunting	Stunting		
Rating Unit						%	%	%	%	%	%		
Rating Date						06/08/11	06/08/11	06/08/11	06/08/11	06/13/11	06/13/11		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code						
10	Accent Q.....nicosulfuron	75 D		0.0513	lb ai/A	POST	A	5.7 ef	6.7 d	0.0 d	0.0 d	4.7 ef	7.0 f
	_isoxadifen-ethyl	50 WG		0.0156	lb ai/A	POST	A						
	Crop Oil Concentrate	100 L		1%	v/v	POST	A						
	30% Urea Ammonium Nitrate	100 L		2%	v/v	POST	A						
11	Steadfast Premix	75 WG		0.07	lb ai/A	POST	A	9.7 de	11.3 abc	0.0 d	0.0 d	20.0 b	20.0 c
	Crop Oil Concentrate	100 L		1%	v/v	POST	A						
	30% Urea Ammonium Nitrate	100 L		2%	v/v	POST	A						
12	Steadfast Q Premix	75 WG		0.07	lb ai/A	POST	A	9.7 de	8.0 bcd	0.0 d	0.0 d	14.0 cd	14.0 de
	_isoxadifen-ethyl	50 WG		0.0156	lb ai/A	POST	A						
	Crop Oil Concentrate	100 L		1%	v/v	POST	A						
	30% Urea Ammonium Nitrate	100 L		2%	v/v	POST	A						
LSD (P=.05)						6.31	4.59	6.25	4.17	5.93	4.71		
Standard Deviation						3.73	2.71	3.69	2.46	3.50	2.78		
CV						34.32	30.91	39.2	40.65	19.58	17.46		
Replicate F						0.422	0.094	0.813	0.225	0.825	1.824		
Replicate Prob(F)						0.6610	0.9103	0.4563	0.8006	0.4515	0.1849		
Treatment F						9.666	7.693	50.286	46.518	40.904	34.419		
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	0.0001	0.0001		

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Crop Code								ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Weed or Crop Name								FldCrn	FldCrn	FldCrn	FldCrn	FldCrn	FldCrn
Weed or Crop Name								H5707	H5753	H5707	H5753	H5707	H5753
Rating Data Type								Stunting	Stunting	Stunting	Stunting	Stunting	Stunting
Rating Unit								%	%	%	%	%	%
Rating Date								06/19/11	06/19/11	06/23/11	06/23/11	07/01/11	07/01/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code						
1	Untreated Check							0.0f	0.0f	0.0g	0.0e	0.0d	0.0c
2	Distinct Premix	70	WG	0.525 lb ai/A		POST	A	10.7 de	10.7 de	3.3 fg	6.7 cd	0.0 d	0.0 c
	Nonionic Surfactant	100	L	0.25 % v/v		POST	A						
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v		POST	A						
3	Status Premix	56	WG	0.525 lb ai/A		POST	A	10.7 de	11.3 de	5.0 efg	4.0 de	3.3 d	2.3 c
	Nonionic Surfactant	100	L	0.25 % v/v		POST	A						
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v		POST	A						
4	Resolve.....rimsulfuron	25	WG	0.0312 lb ai/A		POST	A	28.3 b	18.0 ab	24.0 b	17.3 b	15.0 b	10.7 a
	Crop Oil Concentrate	100	L	1 % v/v		POST	A						
	30% Urea Ammonium Nitrate	100	L	2 % v/v		POST	A						
5	Resolve.....rimsulfuron	25	WG	0.028 lb ai/A		POST	A	46.7 a	20.0 a	38.3 a	23.3 a	28.3 a	9.0 ab
	Harmony GT.....thifensulfuron	75	DF	.00586 lb ai/A		POST	A						
	Crop Oil Concentrate	100	L	1 % v/v		POST	A						
	30% Urea Ammonium Nitrate	100	L	2 % v/v		POST	A						
6	Resolve Q Multi-Pak	22.4	DF	0.035 lb ai/A				15.7 c	13.0 cd	8.0 def	9.7 c	0.0 d	0.0 c
	_Resolve.....rimsulfuron	25	WG	0.0288 lb ai/A		POST	A						
	_Harmony SG.....thifensulfuron	50	SG	.00625 lb ai/A		POST	A						
	_isoxadifen-ethyl	50	WG	0.0144 lb ai/A		POST	A						
	Crop Oil Concentrate	100	L	1 % v/v		POST	A						
	30% Urea Ammonium Nitrate	100	L	2 % v/v		POST	A						
7	Require Q Multi-Pak	59.19	WG	0.296 lb ai/A				14.7 cd	13.0 cd	10.0 de	9.7 c	7.0 c	7.0 b
	_Resolve.....rimsulfuron	25	WG	0.0313 lb ai/A		POST	A						
	_Dicamba XP.....dicamba	70	WG	0.24 lb ai/A		POST	A						
	_isoxadifen-ethyl	50	WG	0.0156 lb ai/A		POST	A						
	Crop Oil Concentrate	100	L	1 % v/v		POST	A						
	30% Urea Ammonium Nitrate	100	L	2 % v/v		POST	A						
8	Resolve.....rimsulfuron	25	WG	0.0312 lb ai/A		POST	A	17.3 c	15.7 bc	15.7 c	19.0 ab	9.7 c	8.7 ab
	Dicamba XP.....dicamba	70	WG	0.24 lb ai/A		POST	A						
	Crop Oil Concentrate	100	L	1 % v/v		POST	A						
	30% Urea Ammonium Nitrate	100	L	2 % v/v		POST	A						
9	Accent SP.....nicosulfuron	75	D	0.0513 lb ai/A		POST	A	8.0e	2.3f	0.0g	2.3de	0.0d	0.0c
	Crop Oil Concentrate	100	L	1 % v/v		POST	A						
	30% Urea Ammonium Nitrate	100	L	2 % v/v		POST	A						

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

(Corn5-11)

University of Delaware

							ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX	
							FldCrn	FldCrn	FldCrn	FldCrn	FldCrn	FldCrn	
							H5707	H5753	H5707	H5753	H5707	H5753	
							Stunting	Stunting	Stunting	Stunting	Stunting	Stunting	
							%	%	%	%	%	%	
							06/19/11	06/19/11	06/23/11	06/23/11	07/01/11	07/01/11	
Trt	Treatment	Form	Form	Rate	Grow	Appl							
No.	Name	Conc	Type	Rate	Unit	Stg	Code						
10	Accent Q.....nicosulfuron	75 D		0.0513	lb ai/A	POST	A	2.3f	2.3f	0.0g	0.0e	0.0d	0.0c
	_isoxadifen-ethyl	50 WG		0.0156	lb ai/A	POST	A						
	Crop Oil Concentrate	100 L		1%	v/v	POST	A						
	30% Urea Ammonium Nitrate	100 L		2%	v/v	POST	A						
11	Steadfast Premix	75 WG		0.07	lb ai/A	POST	A	15.3cd	10.7de	12.3cd	10.7c	0.0d	0.0c
	Crop Oil Concentrate	100 L		1%	v/v	POST	A						
	30% Urea Ammonium Nitrate	100 L		2%	v/v	POST	A						
12	Steadfast Q Premix	75 WG		0.07	lb ai/A	POST	A	8.0e	8.0e	0.0g	5.7cd	0.0d	0.0c
	_isoxadifen-ethyl	50 WG		0.0156	lb ai/A	POST	A						
	Crop Oil Concentrate	100 L		1%	v/v	POST	A						
	30% Urea Ammonium Nitrate	100 L		2%	v/v	POST	A						
	LSD (P=.05)							4.72	3.92	5.45	5.51	3.46	3.60
	Standard Deviation							2.79	2.32	3.22	3.26	2.04	2.12
	CV							18.84	22.23	33.11	36.06	38.66	67.68
	Replicate F							0.443	0.186	0.614	0.388	0.527	0.966
	Replicate Prob(F)							0.6478	0.8312	0.5502	0.6830	0.5976	0.3960
	Treatment F							59.863	22.182	39.716	16.127	55.478	12.456
	Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Crop Code						ZEAMX	ZEAMX
Weed or Crop Name						FldCm	FldCm
Weed or Crop Name						H5707	H5753
Rating Data Type						Yield	Yield
Rating Unit						Bu/A	Bu/A
Rating Date						09/26/11	09/26/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code
1	Untreated Check						
						105.0 b	91.3 a
2	Distinct Premix	70	WG	0.525 lb ai/A		POST A	
	Nonionic Surfactant	100	L	0.25 % v/v		POST A	
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v		POST A	
						114.4 ab	91.4 a
3	Status Premix	56	WG	0.525 lb ai/A		POST A	
	Nonionic Surfactant	100	L	0.25 % v/v		POST A	
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v		POST A	
						106.1 ab	104.5 a
4	Resolve.....rimsulfuron	25	WG	0.0312 lb ai/A		POST A	
	Crop Oil Concentrate	100	L	1 % v/v		POST A	
	30% Urea Ammonium Nitrate	100	L	2 % v/v		POST A	
						82.5 c	107.4 a
5	Resolve.....rimsulfuron	25	WG	0.028 lb ai/A		POST A	
	Harmony GT.....thifensulfuron	75	DF	.00586 lb ai/A		POST A	
	Crop Oil Concentrate	100	L	1 % v/v		POST A	
	30% Urea Ammonium Nitrate	100	L	2 % v/v		POST A	
						77.7 c	108.8 a
6	Resolve Q Multi-Pak	22.4	DF	0.035 lb ai/A			
	_Resolve.....rimsulfuron	25	WG	0.0288 lb ai/A		POST A	
	_Harmony SG.....thifensulfuron	50	SG	.00625 lb ai/A		POST A	
	_isoxadifen-ethyl	50	WG	0.0144 lb ai/A		POST A	
	Crop Oil Concentrate	100	L	1 % v/v		POST A	
	30% Urea Ammonium Nitrate	100	L	2 % v/v		POST A	
						110.6 ab	96.7 a
7	Require Q Multi-Pak	59.19	WG	0.296 lb ai/A			
	_Resolve.....rimsulfuron	25	WG	0.0313 lb ai/A		POST A	
	_Dicamba XP.....dicamba	70	WG	0.24 lb ai/A		POST A	
	_isoxadifen-ethyl	50	WG	0.0156 lb ai/A		POST A	
	Crop Oil Concentrate	100	L	1 % v/v		POST A	
	30% Urea Ammonium Nitrate	100	L	2 % v/v		POST A	
						108.4 ab	105.5 a
8	Resolve.....rimsulfuron	25	WG	0.0312 lb ai/A		POST A	
	Dicamba XP.....dicamba	70	WG	0.24 lb ai/A		POST A	
	Crop Oil Concentrate	100	L	1 % v/v		POST A	
	30% Urea Ammonium Nitrate	100	L	2 % v/v		POST A	
						103.7 b	96.8 a
9	Accent SP.....nicosulfuron	75	D	0.0513 lb ai/A		POST A	
	Crop Oil Concentrate	100	L	1 % v/v		POST A	
	30% Urea Ammonium Nitrate	100	L	2 % v/v		POST A	
						103.8 b	97.2 a

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

(Corn5-11)

University of Delaware

Crop Code		ZEAMX	ZEAMX						
Weed or Crop Name		FldCm	FldCm						
Weed or Crop Name		H5707	H5753						
Rating Data Type		Yield	Yield						
Rating Unit		Bu/A	Bu/A						
Rating Date		09/26/11	09/26/11						
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code		
10	Accent Q.....nicosulfuron	75 D		0.0513	lb ai/A	POST	A	119.7 a	106.7 a
	_isoxadifen-ethyl	50 WG		0.0156	lb ai/A	POST	A		
	Crop Oil Concentrate	100 L		1%	v/v	POST	A		
	30% Urea Ammonium Nitrate	100 L		2%	v/v	POST	A		
11	Steadfast Premix	75 WG		0.07	lb ai/A	POST	A	101.6 b	105.9 a
	Crop Oil Concentrate	100 L		1%	v/v	POST	A		
	30% Urea Ammonium Nitrate	100 L		2%	v/v	POST	A		
12	Steadfast Q Premix	75 WG		0.07	lb ai/A	POST	A	114.4 ab	111.9 a
	_isoxadifen-ethyl	50 WG		0.0156	lb ai/A	POST	A		
	Crop Oil Concentrate	100 L		1%	v/v	POST	A		
	30% Urea Ammonium Nitrate	100 L		2%	v/v	POST	A		
LSD (P=.05)								14.62	15.41
Standard Deviation								8.63	9.10
CV								8.3	8.92
Replicate F								0.534	1.452
Replicate Prob(F)								0.5939	0.2556
Treatment F								6.185	1.760
Treatment Prob(F)								0.0001	0.1248

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

PRE and POST Weed Control in Glyphosate-tolerant Field Corn

Trial ID: Corn6-11 Cooperator: Syngenta, Gowan
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947
Investigator: Mark VanGessel

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Morningglory Species	IPOSS	Ipomoea sp.

Crop 1: Field Corn **ZEAMX** **Variety:** H5753VTS
Planting Date: 05/06/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Medium
Soil Temperature: 70 F **Soil Moisture:** Moist **Emergence Date:** 05/14/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.

SOIL DESCRIPTION

% Sand: 81 **% OM:** 1.2 **Texture:** loamy sand
% Silt: 12 **pH:** 5.9
% Clay: 7 **CEC:** 4.5 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05/09/11	06/01/11	06/06/11
Time of Day:	9:30 am	10:15 am	10:30 am
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	V4	V5
Applic. Placement:	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	65 F	82 F	72 F
% Relative Humidity:	52	65	73
Wind Velocity, Unit:	1 mph	4 mph	1 mph
Wind Direction:	Northeast	Southwest	Northwest
Dew Presence (Y/N):	Y	N	N
Soil Temp., Unit:	62 F	80 F	70 F
Soil Surf. Moisture:	Dry	Dry	Dry
Root Zone Moisture:	Moist	Moist	Moist
Leaf Surf. Moisture:	N/A	Dry	Dry
% Cloud Cover:	5	20	30

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code:	ZEAMX	ZEAMX	ZEAMX
Growth Stage:		V5	V7
Height, Unit:		13 in	16 in
Crop Health:		Good	Good

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:	IPOSS	IPOSS	IPOSS
Growth Stage:		cot-1 lf	vegetative
Height, Unit:		1 in	5 in
Density, Unit:		2-10 m2	0-10 m2

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	Tractor	Tractor	Tractor
Operating Pressure:	40 psi	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	20 in	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	20 in	28 in	32 in
Ground Speed, Unit:	3 mph	3 mph	3 mph
Carrier:	water	water	water
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air	Comp. Air

Trial Comments

5/26/11 - No injury observed

6/3/11 - Injury for treatments 3 & 5 based on POST applications.

Lambsquarter is sporadic in study area but control was very poor with treatments 6, 8, and 9. No lambsquarter observed in any other treatment

PRE and POST Weed Control in Glyphosate-tolerant Field Corn												
Trial ID: Corn6-11 Cooperator: Syngenta, Gowan												
Location: Field #14 Investigator: Mark VanGessel												
Weed Code							ZEAMX	AMAPA	IPOSS	DIGSA	ZEAMX	
Crop Code							Field	Palmer	Morngrly	Crabgras	Field	
Weed or Crop Name							Corn	Amaranth	Species	Species	Corn	
Weed or Crop Name							Injury	Control	Control	Control	Injury	
Rating Data Type							%	%	%	%	%	
Rating Unit							06/03/11	06/03/11	06/03/11	06/03/11	06/14/11	
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code					
1	Untreated Check							0.0 b	0.0 b	0.0 e	0.0 b	0.0 a
2	A17622C Princep.....simazine	3.7 FL 4 L		2.78 lb 1 lb	ai/A ai/A	PRE PRE	A A	0.0 b	100.0 a	86.0 ab	95.0 a	
3	A17622C Halex GT Premix Atrazine 4L Nonionic Surfactant	3.7 FL 4.38 SC 4 L 100 L		1.39 lb 1.97 lb 0.5 lb 0.25 %	ai/A ai/A ai/A v/v	PRE V4 V4 V4	A B B B	0.0 b	100.0 a	99.0 a	100.0 a	
4	A17622C Princep.....simazine Touchdown Total...k glyphosate	3.7 FL 4 L 4.17 SL		1.39 lb 1 lb 0.98 lb	ai/A ai/A ae/A	PRE PRE V5	A A C	0.0 b	100.0 a	74.3 bc	96.7 a	0.0 a
5	A17622C Princep.....simazine A17622C	3.7 FL 4 L 3.7 FL		1.39 lb 1 lb 1.39 lb	ai/A ai/A ai/A	PRE PRE V4	A A B	0.0 b	100.0 a	77.7 bc	96.7 a	
6	Bicep II Magnum Premix Sequence Premix Spirit Premix	5.5 L 5.25 EW 57 WG		1.79 lb 2.3 lb 0.0178 lb	ai/A ai/A ai/A	PRE V5 V5	A C C	0.0 b	86.0 a	40.0 d	100.0 a	5.7 a
7	A17622C Princep.....simazine	3.7 FL 4 L		2.31 lb 1 lb	ai/A ai/A	PRE PRE	A A	0.0 b	100.0 a	85.3 ab	100.0 a	
8	Bicep II Magnum Premix Permit Plus Premix Nonionic Surfactant	5.5 L 75 WG 100 L		1.1 lb 0.035 lb 0.25 %	ai/A ai/A v/v	PRE V5 V5	A C C	0.0 b	83.3 a	0.0 e	93.3 a	2.3 a
9	Bicep II Magnum Premix Permit Plus Premix Roundup WeatherMax..glyphosate Nonionic Surfactant Dry Ammonium Sulfate	5.5 L 75 WG 4.5 AS 100 L 100 D		1.1 lb 0.035 lb 0.77 lb 0.125 % 2.04 %	ai/A ai/A ae/A v/v w/v	PRE V5 V5 V5 V5	A C C C C	0.0 b	81.7 a	0.0 e	96.7 a	4.7 a
10	Bicep II Magnum Premix Basis Premix	5.5 L 75 DF		2.2 lb 0.0234 lb	ai/A ai/A	PRE PRE	A A	13.0 a	100.0 a	64.3 c	100.0 a	
LSD (P=.05)							2.87	18.73	19.82	6.94	6.90	
Standard Deviation							1.67	10.92	11.55	4.04	3.67	
CV							128.72	12.83	21.93	4.6	144.68	
Replicate F							1.000	3.323	2.567	0.320	0.392	
Replicate Prob(F)							0.3874	0.0591	0.1045	0.7301	0.6880	
Treatment F							18.107	24.008	35.070	175.850	1.521	
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.2840	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

							AMAPA	IPOSS	DIGSA	
Weed Code							Palmer	Morngly	Crabgras	
Crop Code							Amaranth	Species	Species	
Weed or Crop Name							Control	Control	Control	
Weed or Crop Name							%	%	%	
Rating Data Type							06/20/11	06/20/11	06/20/11	
Rating Unit										
Rating Date										
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code			
1	Untreated Check							0.0c	0.0d	0.0b
2	A17622C Princep.....simazine	3.7 FL 4 L		2.78 lb ai/A 1 lb ai/A	ai/A	PRE PRE	A A	100.0 a	77.0 ab	100.0 a
3	A17622C Hallex GT Premix Atrazine 4L Nonionic Surfactant	3.7 FL 4.38 SC 4 L 100 L		1.39 lb ai/A 1.97 lb ai/A 0.5 lb ai/A 0.25 % v/v	ai/A	PRE V4 V4 V4	A B B B	100.0 a	91.3 a	100.0 a
4	A17622C Princep.....simazine Touchdown Total...k glyphosate	3.7 FL 4 L 4.17 SL		1.39 lb ai/A 1 lb ai/A 0.98 lb ae/A	ai/A	PRE PRE V5	A A C	100.0 a	92.3 a	100.0 a
5	A17622C Princep.....simazine A17622C	3.7 FL 4 L 3.7 FL		1.39 lb ai/A 1 lb ai/A 1.39 lb ai/A	ai/A	PRE PRE V4	A A B	100.0 a	94.0 a	100.0 a
6	Bicep II Magnum Premix Sequence Premix Spirit Premix	5.5 L 5.25 EW 57 WG		1.79 lb ai/A 2.3 lb ai/A 0.0178 lb ai/A	ai/A	PRE V5 V5	A C C	100.0 a	85.0 ab	100.0 a
7	A17622C Princep.....simazine	3.7 FL 4 L		2.31 lb ai/A 1 lb ai/A	ai/A	PRE PRE	A A	100.0 a	73.3 b	100.0 a
8	Bicep II Magnum Premix Permit Plus Premix Nonionic Surfactant	5.5 L 75 WG 100 L		1.1 lb ai/A 0.035 lb ai/A 0.25 % v/v	ai/A	PRE V5 V5	A C C	92.3 b	78.3 ab	94.3 a
9	Bicep II Magnum Premix Permit Plus Premix Roundup WeatherMax..glyphosate Nonionic Surfactant Dry Ammonium Sulfate	5.5 L 75 WG 4.5 AS 100 L 100 D		1.1 lb ai/A 0.035 lb ai/A 0.77 lb ae/A 0.125 % v/v 2.04 % w/v	ai/A	PRE V5 V5 V5 V5	A C C C C	100.0 a	87.0 ab	100.0 a
10	Bicep II Magnum Premix Basis Premix	5.5 L 75 DF		2.2 lb ai/A 0.0234 lb ai/A	ai/A	PRE PRE	A A	100.0 a	30.0 c	96.7 a
LSD (P=.05)							5.85	17.53	5.87	
Standard Deviation							3.41	10.22	3.42	
CV							3.82	14.43	3.84	
Replicate F							1.000	1.508	2.076	
Replicate Prob(F)							0.3874	0.2481	0.1545	
Treatment F							255.002	27.662	252.123	
Treatment Prob(F)							0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Preemergence Programs for Glyphosate-tolerant Field Corn

Trial ID: Corn7-11 Cooperator: FMC
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Morningglory Species	IPOSS	Ipomoea sp.

Crop 1: Field Corn **ZEAMX** **Variety:** H5753VTS
Planting Date: 05/06/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Medium
Soil Temperature: 70 F **Soil Moisture:** Moist **Emergence Date:** 05/14/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Chisel Plowed, Disked & Field Cultivated

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.

SOIL DESCRIPTION

% Sand: 81 **% OM:** 1.2 **Texture:** loamy sand
% Silt: 12 **pH:** 5.9
% Clay: 7 **CEC:** 4.5 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	05/09/11	06/03/11
Time of Day:	10:20 am	9:30 am
Application Method:	Spray	Spray
Application Timing:	PRE	V4-5
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	65 F	65 F
% Relative Humidity:	52	42
Wind Velocity, Unit:	1 mph	4 mph
Wind Direction:	Northeast	North
Dew Presence (Y/N):	N	Y
Soil Temp., Unit:	62 F	62 F
Soil Surf. Moisture:	Dry	Moist
Root Zone Moisture:	Moist	Moist
Leaf Surf. Moisture:	N/A	Moist
% Cloud Cover:	5	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code:	ZEAMX	ZEAMX
Growth Stage:		V6
Height, Unit:		14 in
Crop Health:		Good

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	IPOSS	IPOSS
Growth Stage:		4-5 leaf
Height, Unit:		4 in
Density, Unit:		5-10 m ²

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	20 in	28 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air

Trial Comments

6/14/11 - Plot 110 = 15% stunting. Plot 308 = 10% stunting. Basis applied PRE still showing some stunting.

6/3/11 - Lambsquarter code: 0 = none present. 1 = present.

Preemergence Programs for Glyphosate-tolerant Field Corn											
Trial ID: Corn7-11 Cooperator: FMC											
Location: Field #14 Investigator: Mark VanGessel											
Weed Code	Crop Code	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date		ZEAMX Field Corn Stunting %	ZEAMX Field Corn Stunting %	AMAPA Palmer Amaranth Control %	CHEAL Common Lambqtrs Presence	IPOSS Morngrly Species Control %
							05/26/11	06/03/11	06/03/11	06/03/11	06/03/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Untreated Check						0.0c	0.0c	0.0c	0.6 ab	0.0d
2	F-9310-6	2 SE		0.125 lb ai/A	PRE	A	0.0c	0.0c	100.0a	0.0c	64.3 abc
	Atrazine 4L	4 L		1 lb ai/A	PRE	A					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B					
3	F-9310-6	2 SE		0.14 lb ai/A	PRE	A	0.0c	0.0c	100.0a	0.0c	87.7 a
	Atrazine 4L	4 L		1.5 lb ai/A	PRE	A					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B					
4	Fierce Premix	76 WG		0.142 lb ai/A	PRE	A	9.0b	6.3b	100.0a	0.0c	76.0 abc
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B					
5	Harness Xtra 5.6L Premix	5.6 L		2.8 lb ai/A	PRE	A	0.0c	0.0c	100.0a	0.3 bc	60.0 bc
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B					
6	Lumax Premix	3.95 SC		2.47 lb ai/A	PRE	A	0.0c	2.3bc	100.0a	0.0c	81.7 ab
	Atrazine 4L	4 L		0.375 lb ai/A	PRE	A					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B					
7	Dual II Magnum..s-metolachlor	7.64 E		1.43 lb ai/A	PRE	A	0.0c	0.0c	90.0b	0.3bc	0.0d
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B					
8	Bicep II Magnum Premix	5.5 L		2.2 lb ai/A	PRE	A	0.0c	0.0c	100.0a	1.0a	66.0 abc
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B					
9	Atrazine 4L	4 L		1 lb ai/A	PRE	A	0.0c	0.0c	93.3ab	1.0a	55.0c
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B					
10	Basis Premix	75 DF		0.0234 lb ai/A	PRE	A	12.3a	19.0a	98.3ab	0.0c	71.0 abc
	Atrazine 4L	4 L		1.25 lb ai/A	PRE	A					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B					
LSD (P=.05)							1.73	5.72	9.92	0.53	24.28
Standard Deviation							1.01	3.33	5.78	0.30	14.16
CV							47.39	120.5	6.56	94.41	25.2
Replicate F							0.130	1.856	0.474	2.056	3.327
Replicate Prob(F)							0.8785	0.1849	0.6302	0.1604	0.0590
Treatment F							61.174	9.897	87.227	5.422	14.547
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0017	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						DIGSS	AMAPA	IPOSS	DIGSA	
Crop Code										
Weed or Crop Name						Crabgras	Palmer	Morngrly	Crabgras	
Weed or Crop Name						Species	Amaranth	Species	Species	
Rating Data Type						Control	Control	Control	Control	
Rating Unit						%	%	%	%	
Rating Date						06/03/11	06/14/11	06/14/11	06/14/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code				
1	Untreated Check						0.0 c	0.0 c	0.0 d	0.0 c
2	F-9310-6	2 SE		0.125 lb ai/A	PRE	A	100.0 a	100.0 a	87.3 ab	98.3 b
	Atrazine 4L	4 L		1 lb ai/A	PRE	A				
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B				
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B				
3	F-9310-6	2 SE		0.14 lb ai/A	PRE	A	100.0 a	100.0 a	91.7 ab	100.0 a
	Atrazine 4L	4 L		1.5 lb ai/A	PRE	A				
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B				
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B				
4	Fierce Premix	76 WG		0.142 lb ai/A	PRE	A	96.7 a	100.0 a	88.7 ab	100.0 a
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B				
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B				
5	Harness Xtra 5.6L Premix	5.6 L		2.8 lb ai/A	PRE	A	100.0 a	99.0 b	86.7 ab	100.0 a
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B				
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B				
6	Lumax Premix	3.95 SC		2.47 lb ai/A	PRE	A	100.0 a	100.0 a	92.7 a	100.0 a
	Atrazine 4L	4 L		0.375 lb ai/A	PRE	A				
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B				
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B				
7	Dual II Magnum..s-metolachlor	7.64 E		1.43 lb ai/A	PRE	A	100.0 a	100.0 a	72.7 c	100.0 a
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B				
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B				
8	Bicep II Magnum Premix	5.5 L		2.2 lb ai/A	PRE	A	97.3 a	100.0 a	86.0 ab	100.0 a
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B				
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B				
9	Atrazine 4L	4 L		1 lb ai/A	PRE	A	46.7 b	100.0 a	87.3 ab	100.0 a
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B				
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B				
10	Basis Premix	75 DF		0.0234 lb ai/A	PRE	A	95.0 a	100.0 a	84.3 b	100.0 a
	Atrazine 4L	4 L		1.25 lb ai/A	PRE	A				
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A	V4-5	B				
	Dry Ammonium Sulfate	100 D		1.5 % w/v	V4-5	B				
LSD (P=.05)						9.01	0.94	8.28	1.57	
Standard Deviation						5.25	0.55	4.83	0.91	
CV						6.29	0.61	6.21	1.02	
Replicate F						0.530	1.000	1.122	1.000	
Replicate Prob(F)						0.5974	0.3874	0.3472	0.3874	
Treatment F						123.049	9978.778	99.948	3587.667	
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Evaluating Residual Broadleaf Herbicides with Glyphosate for RR corn

Trial ID: Corn8-11 Cooperator:
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Pigweed Species	AMASS	Amaranthus sp.
2.	Crabgrass Species	DIGSS	Digitaria sp.
3.	Morningglory Species	IPOSS	Ipomoea sp.

Crop 1: Field Corn **ZEAMX** **Variety:** H5753VTS
Planting Date: 05/06/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Medium
Soil Temperature: 70 F **Soil Moisture:** Moist **Emergence Date:** 05/14/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Chisel Plowed, Disked & Field Cultivated

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.

SOIL DESCRIPTION

% Sand: 81 **% OM:** 1.2 **Texture:** loamy sand
% Silt: 12 **pH:** 5.9
% Clay: 7 **CEC:** 4.5 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	05/24/11
Time of Day:	10:00 am
Application Method:	Spray
Application Timing:	V2
Applic. Placement:	Brdcst
Air Temp., Unit:	79 F
% Relative Humidity:	72
Wind Velocity, Unit:	4 mph
Wind Direction:	Southwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	78 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	15

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code:	ZEAMX
Growth Stage:	V2
Height, Unit:	3.5 in
Crop Health:	Good

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	AMASS
Growth Stage:	Vegetative
Height, Unit:	2 in
Density,Unit:	350 m2
Weed 2 Code:	DIGSS
Growth Stage:	2-3 leaf
Height, Unit:	2 in
Density,Unit:	125 m2
Weed 3 Code:	IPOSS
Growth Stage:	cot-1 leaf
Height, Unit:	1 in
Density,Unit:	0-5 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	22 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

06-01-11: Over 95% morningglory control for all treatments with dicamba, atrazine, and Callisto. Treatment 15 had reduced rate of Callisto and control was not as consistent as higher Callisto rates. Poor mornnglory control observed in treatments 2, 10, and 11.

Evaluating Residual Broadleaf Herbicides with Glyphosate for RR corn												
Trial ID: Corn8-11 Cooperator:												
Location: Field #14 Investigator: Mark VanGessel												
Weed Code							ZEAMX	AMAPA	IPOSS	DIGSA	AMAPA	
Crop Code							Field	Palmer	Morngrly	Large	Palmer	
Weed or Crop Name							Corn	Amaranth	Species	Crabgras	Amaranth	
Weed or Crop Name							Injury	Control	Control	Control	Control	
Rating Data Type							%	%	%	%	%	
Rating Unit							06/01/11	06/14/11	06/14/11	06/14/11	08/29/11	
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code					
1	Untreated Check							0.0 d	0.0 g	0.0 e	0.0 g	0.0 g
2	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	V2	A		0.0 d	76.7 ef	46.7 d	81.7 ef	73.3 f
3	Roundup WeatherMax..glyphosate Atrazine 4L	4.5 AS 4 L		0.77 lb ae/A 1 lb ai/A	V2 V2	A A		0.0 d	100.0 a	77.7 ab	93.3 abc	95.0 ab
4	Roundup WeatherMax..glyphosate Atrazine 4L	4.5 AS 4 L		0.77 lb ae/A 1.5 lb ai/A	V2 V2	A A		5.7 bc	100.0 a	76.7 ab	96.7 ab	95.0 ab
5	Roundup WeatherMax..glyphosate Banvel.....dicamba	4.5 AS 4 EC		0.77 lb ae/A 0.25 lb ai/A	V2 V2	A A		8.0 b	95.0 ab	65.0 bc	85.0 def	88.3 bc
6	Roundup WeatherMax..glyphosate Sanda.....halosulfuron	4.5 AS 75 DF		0.77 lb ae/A 0.031 lb ai/A	V2 V2	A A		4.0 bcd	79.3 def	73.3 ab	81.7 ef	83.3 cde
7	Roundup WeatherMax..glyphosate Callisto.....mesotrione	4.5 AS 4 SC		0.77 lb ae/A 0.094 lb ai/A	V2 V2	A A		0.0 d	100.0 a	78.3 ab	90.0 bcd	96.7 a
8	Roundup WeatherMax..glyphosate Impact.....topramezone	4.5 AS 2.8 SC		0.77 lb ae/A 0.0164 lb ai/A	V2 V2	A A		0.0 d	83.3 cde	53.3 cd	83.3 def	78.3 def
9	Roundup WeatherMax..glyphosate Laudis.....tembotrione	4.5 AS 3.5 SC		0.77 lb ae/A 0.082 lb ai/A	V2 V2	A A		0.0 d	83.3 cde	63.3 bc	83.3 def	85.0 cd
10	Roundup WeatherMax..glyphosate Python.....flumetsulam	4.5 AS 80 WG		0.77 lb ae/A 0.04 lb ai/A	V2 V2	A A		1.7 cd	69.3 f	53.3 cd	80.0 f	76.7 ef
11	Roundup WeatherMax..glyphosate Hornet WDG Premix	4.5 AS 78.5 WG		0.77 lb ae/A 0.196 lb ai/A	V2 V2	A A		2.3 cd	76.0 ef	66.0 bc	81.7 ef	80.0 def
12	Roundup WeatherMax..glyphosate Callisto.....mesotrione Atrazine 4L	4.5 AS 4 SC 4 L		0.77 lb ae/A 0.094 lb ai/A 0.5 lb ai/A	V2 V2 V2	A A A		0.0 d	100.0 a	74.3 ab	99.0 a	98.3 a
13	Roundup WeatherMax..glyphosate Resolve Q Multi-Pak Resolve.....rimsulfuron Harmony SG.....thifensulfuron _isoxadifen-ethyl	4.5 AS 22.4 DF 25 WG 50 SG 50 WG		0.77 lb ae/A 0.0175 lb ai/A 0.0144 lb ai/A .00313 lb ai/A 0.0156 lb ai/A	V2 V2 V2 V2 V2	A A A A A		5.7 bc	91.7 abc	70.0 b	97.3 a	93.3 ab
14	Roundup WeatherMax..glyphosate Status Premix	4.5 AS 56 WG		0.77 lb ae/A 0.175 lb ai/A	V2 V2	A A		3.3 bcd	88.3 bcd	79.3 ab	87.7 cde	88.3 bc
15	Roundup WeatherMax..glyphosate Realm Q Premix	4.5 AS 38.7 WG		0.77 lb ae/A 0.097 lb ai/A	V2 V2	A A		0.0 d	97.7 ab	78.3 ab	100.0 a	100.0 a
16	Roundup WeatherMax..glyphosate Capreno Premix	4.5 AS 3.45 SC		0.77 lb ae/A 0.081 lb ai/A	V2 V2	A A		13.3 a	88.3 bcd	86.7 a	100.0 a	81.7 cde
LSD (P=.05)							4.80	10.52	16.23	7.22	7.74	
Standard Deviation							2.88	6.31	9.73	4.33	4.64	
CV							104.74	7.6	14.94	5.17	5.66	
Replicate F							1.273	1.000	1.220	1.215	5.097	
Replicate Prob(F)							0.2946	0.3798	0.3095	0.3110	0.0124	
Treatment F							5.312	44.336	13.392	88.554	76.135	
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							IPOSS	DIGSA		
Crop Code									ZEAMX	
Weed or Crop Name							Morngrly	Large	Field	
Weed or Crop Name							Species	Crabgras	Corn	
Rating Data Type							Control	Control	Yield	
Rating Unit							%	%	Bu/A	
Rating Date							08/29/11	08/29/11	09/15/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code			
1	Untreated Check							0.0 e	0.0 g	177.2 f
2	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	V2	A		60.0 ab	75.0 f	213.2 a-e
3	Roundup WeatherMax..glyphosate Atrazine 4L	4.5	AS 4 L	0.77 lb ae/A 1 lb ai/A	V2 V2	A A		60.0 ab	90.0 bc	212.5 a-e
4	Roundup WeatherMax..glyphosate Atrazine 4L	4.5	AS 4 L	0.77 lb ae/A 1.5 lb ai/A	V2 V2	A A		56.7 bc	91.7 ab	226.8 abc
5	Roundup WeatherMax..glyphosate Banvel.....dicamba	4.5	AS 4 EC	0.77 lb ae/A 0.25 lb ai/A	V2 V2	A A		43.3 d	78.5 ef	198.9 def
6	Roundup WeatherMax..glyphosate Sanda.....halosulfuron	4.5	AS 75 DF	0.77 lb ae/A 0.031 lb ai/A	V2 V2	A A		63.3 ab	80.0 def	215.3 a-e
7	Roundup WeatherMax..glyphosate Callisto.....mesotrione	4.5	AS 4 SC	0.77 lb ae/A 0.094 lb ai/A	V2 V2	A A		68.3 ab	83.3 cde	197.1 ef
8	Roundup WeatherMax..glyphosate Impact.....topramezone	4.5	AS 2.8 SC	0.77 lb ae/A 0.0164 lb ai/A	V2 V2	A A		56.7 bc	73.3 f	204.5 cde
9	Roundup WeatherMax..glyphosate Laudis.....tembotrione	4.5	AS 3.5 SC	0.77 lb ae/A 0.082 lb ai/A	V2 V2	A A		43.3 d	90.0 bc	205.9 b-e
10	Roundup WeatherMax..glyphosate Python.....flumetsulam	4.5	AS 80 WG	0.77 lb ae/A 0.04 lb ai/A	V2 V2	A A		46.7 cd	73.3 f	214.6 a-e
11	Roundup WeatherMax..glyphosate Hornet WDG Premix	4.5	AS 78.5 WG	0.77 lb ae/A 0.196 lb ai/A	V2 V2	A A		56.7 bc	86.7 bcd	235.2 a
12	Roundup WeatherMax..glyphosate Callisto.....mesotrione Atrazine 4L	4.5	AS 4 SC 4 L	0.77 lb ae/A 0.094 lb ai/A 0.5 lb ai/A	V2 V2 V2	A A A		60.0 ab	88.3 bc	225.2 a-d
13	Roundup WeatherMax..glyphosate Resolve Q Multi-Pak Resolve.....rimsulfuron Harmony SG.....thifensulfuron _isoxadifen-ethyl	4.5	AS 22.4 DF 25 WG 50 SG 50 WG	0.77 lb ae/A 0.0175 lb ai/A 0.0144 lb ai/A .00313 lb ai/A 0.0156 lb ai/A	V2 V2 V2 V2 V2	A A A A A		63.3 ab	90.0 bc	215.7 a-e
14	Roundup WeatherMax..glyphosate Status Premix	4.5	AS 56 WG	0.77 lb ae/A 0.175 lb ai/A	V2 V2	A A		56.7 bc	88.3 bc	224.0 a-d
15	Roundup WeatherMax..glyphosate Realm Q Premix	4.5	AS 38.7 WG	0.77 lb ae/A 0.097 lb ai/A	V2 V2	A A		70.0 a	98.3 a	213.9 a-e
16	Roundup WeatherMax..glyphosate Capreno Premix	4.5	AS 3.45 SC	0.77 lb ae/A 0.081 lb ai/A	V2 V2	A A		65.0 ab	91.7 ab	232.3 ab
LSD (P=.05)							12.76	7.37	26.71	
Standard Deviation							7.65	4.42	16.02	
CV							14.08	5.53	7.51	
Replicate F							0.080	2.642	1.316	
Replicate Prob(F)							0.9233	0.0883	0.2834	
Treatment F							13.959	78.146	2.493	
Treatment Prob(F)							0.0001	0.0001	0.0162	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Soil-Applied Herbicide Evaluation in Corn

Trial ID: Corn9a11 Cooperator:
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Field Corn **ZEAMX** **Variety:** H5753VTS
Planting Date: 05/06/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Medium
Soil Temperature: 70 F **Soil Moisture:** Moist **Emergence Date:** 05/14/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Chisel Plowed, Disked & Field Cultivated

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.

SOIL DESCRIPTION

% Sand: 75 **% OM:** 1.2 **Texture:** sandy loam
% Silt: 18 **pH:** 5.9
% Clay: 8 **CEC:** 4.9 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	05/09/11
Time of Day:	10:00 am
Application Method:	Spray
Application Timing:	PRE
Applic. Placement:	Brdcst
Air Temp., Unit:	65 F
% Relative Humidity:	52
Wind Velocity, Unit:	1 mph
Wind Direction:	Northeast
Dew Presence (Y/N):	N
Soil Temp., Unit:	62 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	N/A
% Cloud Cover:	5

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

6/3/11 - Most treatments provided some suppression of morningglory.

6/15/11 - Plot 203 - 15% stunting

9/15/11 - Rated overall weed control. Morningglory was the most common weed present and ratings typically reflect morningglory control. Treatments 6 and 7 also had poor fall panicum control.

Some lodging was observed in the trial, and harvest in plots with poor morningglory control could be difficult.

Soil-Applied Herbicide Evaluation in Corn												
Trial ID: Corn9a11		Cooperator:										
Location: Field #14		Investigator: Mark VanGessel										
Weed Code	Crop Code	ZEAMX		ZEAMX		AMAPA	DIGSA	AMAPA	IPOSS			
Weed or Crop Name	Weed or Crop Name	Field Corn	Field Corn	Palmer Amaranth	Large Crabgrass	Palmer Amaranth	Mornnglry Species					
Rating Data Type	Rating Unit	Injury %	Injury %	Control %	Control %	Control %	Control %					
Rating Date	Rating Date	05/26/11	06/03/11	06/03/11	06/03/11	06/15/11	06/15/11					
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code						
1	Untreated Check						0.0c	0.0c	0.0c	0.0b	0.0b	0.0d
2	Lumax Premix	3.95	SC	2.47 lb ai/A	PRE	A	0.0c	0.0c	96.7b	100.0a	100.0a	60.0abc
3	Lexar Premix	3.7	FL	2.77 lb ai/A	PRE	A	0.0c	0.0c	100.0a	100.0a	96.7a	66.7abc
4	Lumax Premix Atrazine 4L	3.95	SC 4L	2.47 lb ai/A 0.75 lb ai/A	PRE	A	0.0c	0.0c	100.0a	100.0a	97.3a	75.0a
5	Lexar Premix Princep.....simazine	3.7	FL 4L	2.77 lb ai/A 1.5 lb ai/A	PRE	A	0.0c	0.0c	100.0a	100.0a	100.0a	73.3ab
6	Bicep II Magnum Premix	5.5	L	2.9 lb ai/A	PRE	A	0.0c	0.0c	100.0a	95.0a	100.0a	61.0abc
7	Bicep II Magnum Premix	5.5	L	2.2 lb ai/A	PRE	A	0.0c	0.0c	100.0a	92.7a	95.0a	50.0abc
8	Bicep II Magnum Premix Resolve.....rimsulfuron	5.5	L 25 WG	2.2 lb ai/A 0.0156 lb ai/A	PRE	A	14.0a	17.3a	100.0a	100.0a	93.3a	55.0abc
9	Bicep II Magnum Premix Prowl H2O.....pendimethalin	5.5	L 3.8 CS	2.2 lb ai/A 1.42 lb ai/A	PRE	A	1.7c	0.0c	100.0a	100.0a	94.3a	36.7c
10	Harness Xtra 5.6L Premix	5.6	L	2.38 lb ai/A	PRE	A	0.0c	0.0c	100.0a	97.3a	96.7a	43.3bc
11	Harness Xtra 5.6L Premix	5.6	L	4.2 lb ai/A	PRE	A	0.0c	0.0c	100.0a	100.0a	100.0a	56.7abc
12	KIH-485.....pyroxasulfone Atrazine 4L	85	WG 4L	0.08 lb ai/A 1.25 lb ai/A	PRE	A	7.3b	5.7b	100.0a	96.7a	96.7a	58.3abc
13	Verdict	5.57	EC	0.52 lb ai/A	PRE	A	9.2b	6.7b	100.0a	96.0a	100.0a	61.7abc
14	Fierce Premix	76	WG	0.142 lb ai/A	PRE	A	9.4b	9.7b	100.0a	97.3a	100.0a	43.3bc
LSD (P=.05)				2.26	4.59	2.59	8.74	7.02	30.25			
Standard Deviation				1.34	2.74	1.54	5.21	4.18	18.02			
CV				45.27	97.38	1.67	5.72	4.61	34.04			
Replicate F				4.905	2.007	1.000	0.287	1.629	0.722			
Replicate Prob(F)				0.0164	0.1547	0.3816	0.7528	0.2156	0.4951			
Treatment F				38.520	11.097	896.385	76.620	117.822	3.263			
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0001	0.0050			

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						DIGSA	TTTTT		
Crop Code							Overall	ZEAMX	
Weed or Crop Name						Large	Annual	Field	
Weed or Crop Name						Crabgras	Weed	Corn	
Rating Data Type						Control	Control	Yield	
Rating Unit						%	%	Bu/A	
Rating Date						06/15/11	09/15/11	09/15/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code			
1	Untreated Check						0.0 e	0.0 e	194.1 a
2	Lumax Premix	3.95	SC	2.47 lb ai/A	PRE	A	96.7 ab	81.7 abc	206.0 a
3	Lexar Premix	3.7	FL	2.77 lb ai/A	PRE	A	100.0 a	88.3 a	208.3 a
4	Lumax Premix Atrazine 4L	3.95	SC 4L	2.47 lb ai/A 0.75 lb ai/A	PRE	A	100.0 a	85.0 ab	213.7 a
5	Lexar Premix Princep.....simazine	3.7	FL 4L	2.77 lb ai/A 1.5 lb ai/A	PRE	A	100.0 a	85.0 ab	197.7 a
6	Bicep II Magnum Premix	5.5	L	2.9 lb ai/A	PRE	A	91.7 abc	70.0 cd	196.7 a
7	Bicep II Magnum Premix	5.5	L	2.2 lb ai/A	PRE	A	87.7 bcd	68.3 d	199.5 a
8	Bicep II Magnum Premix Resolve.....rimsulfuron	5.5	L 25 WG	2.2 lb ai/A 0.0156 lb ai/A	PRE	A	100.0 a	75.0 bcd	188.7 a
9	Bicep II Magnum Premix Prowl H2O.....pendimethalin	5.5	L 3.8 CS	2.2 lb ai/A 1.42 lb ai/A	PRE	A	100.0 a	66.7 d	188.2 a
10	Harness Xtra 5.6L Premix	5.6	L	2.38 lb ai/A	PRE	A	88.3 bcd	71.7 cd	187.1 a
11	Harness Xtra 5.6L Premix	5.6	L	4.2 lb ai/A	PRE	A	100.0 a	70.0 cd	209.8 a
12	KIH-485.....pyroxasulfone Atrazine 4L	85	WG 4L	0.08 lb ai/A 1.25 lb ai/A	PRE	A	93.3 abc	73.3 bcd	199.2 a
13	Verdict	5.57	EC	0.52 lb ai/A	PRE	A	80.0 d	73.3 bcd	204.5 a
14	Fierce Premix	76	WG	0.142 lb ai/A	PRE	A	85.0 cd	66.7 d	187.1 a
LSD (P=.05)							11.18	13.02	25.37
Standard Deviation							6.66	7.76	15.11
CV							7.62	11.14	7.61
Replicate F							0.187	5.460	5.751
Replicate Prob(F)							0.8302	0.0105	0.0085
Treatment F							45.763	22.612	1.047
Treatment Prob(F)							0.0001	0.0001	0.4409

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Comparison of Approaches to Weed Control in Field Corn

Trial ID: CRN10a11 Cooperator:
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Morningglory Species	IPOSS	Ipomoea sp.
2.	Crabgrass Species	DIGSS	Digitaria sp.

Crop 1: Field Corn **ZEAMX** **Variety:** H5753VTS
Planting Date: 05/06/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Medium
Soil Temperature: 70 F **Soil Moisture:** Moist **Emergence Date:** 05/14/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Chisel Plowed, Disked & Field Cultivated

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.

SOIL DESCRIPTION

% Sand: 75 **% OM:** 1.2 **Texture:** sandy loam
% Silt: 18 **pH:** 5.9
% Clay: 8 **CEC:** 4.9 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	05/09/11	05/20/11	05/25/11	06/01/11
Time of Day:	10:00 am	1:30 pm	11:20 am	10:30 am
Application Method:	Spray	Spray	Spray	Spray
Application Timing:	PRE	V1-2	V3	V5
Applic. Placement:	Brdcst	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	65 F	70 F	80 F	82 F
% Relative Humidity:	52	56	60	65
Wind Velocity, Unit:	1 mph	3 mph	2 mph	4 mph
Wind Direction:	Northeast	West	East	Southwest
Dew Presence (Y/N):	N	N	N	N
Soil Temp., Unit:	62 F	70 F	79 F	80 F
Soil Surf. Moisture:	Dry	Moist	Dry	Dry
Root Zone Moisture:	Moist	Moist	Moist	Moist
Leaf Surf. Moisture:	N/A	Dry	Dry	Dry
% Cloud Cover:	5	95	20	20

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code:	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Growth Stage:		V1-2	V3	V5
Height, Unit:		2 in	7 in	13 in
Crop Health:		Good	Good	Good

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code:	IPOSS	IPOSS	IPOSS	IPOSS
Growth Stage:		cotyledon	cotyledon	cot-1 leaf
Height, Unit:		1 in	1 in	1 in
Density, Unit:		2-10 m2	0-3 m2	0-2 m2
Weed 2 Code:	DIGSS	DIGSS	DIGSS	DIGSS
Growth Stage:		1 leaf		
Height, Unit:		0.3 in		
Density, Unit:		50 m2		

APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	Tractor	Backpack	Tractor	Tractor
Operating Pressure:	40 psi	31 psi	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002	11002
Nozzle Spacing, Unit:	20 in	18 in	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	20 in	22 in	24 in	28 in
Ground Speed, Unit:	3 mph	3 mph	3 mph	3 mph
Carrier:	water	water	water	water
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa	20 gpa
Propellant:	Comp. Air	CO2	Comp. Air	Comp. Air

Trial Comments

6/3/11 - All treatments are providing very good weed control.

6/21/11 - All treatments providing excellent crabgrass control.

9/15/11 - Only morningglory control was rated because all other treatments provided over 95% control of Palmer amaranth and annual grasses

Rating for lodging 0= no lodging; 1= 1 to 5% lodged plants; 2= 5 to 15%; 3= 15 to 50%; and 4= >50% lodged plants

All plots had some corn lodging, mostly leaning corn or broken stalks; but all treatments with Prowl had roots out of the ground.

Comparison of Approaches to Weed Control in Field Corn												
Trial ID: CRN10a11		Cooperator:										
Location: Field #14		Investigator: Mark VanGessel										
Weed Code	Crop Code	Weed or Crop Name	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date	ZEAMX Field Corn Stunting %	ZEAMX Field Corn Stunting %	AMAPA Palmer Amaranth Control %	IPOSS Morngrly Species Control %	IPOSS Morngrly Species Control %	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code	05/20/11	06/03/11	06/21/11	06/21/11	09/15/11
1	Untreated Check							0.0b	0.0c	0.0b	0.0e	0.0d
2	Lumax Premix	3.95	SC	2.47	lb ai/A	PRE	A	0.0b	0.0c	100.0a	66.7d	86.7abc
	Atrazine 4L	4L		0.75	lb ai/A	PRE	A					
3	Bicep II Magnum Premix	5.5	L	2.9	lb ai/A	PRE	A	12.3a	23.3a	100.0a	73.3cd	73.3c
	Resolve.....rimsulfuron	25	WG	0.0156	lb ai/A	PRE	A					
4	Bicep II Magnum Premix	5.5	L	2.9	lb ai/A	PRE	A	0.0b	0.0c	100.0a	76.0bcd	91.7ab
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V5	D					
5	Harness Xtra 5.6L Premix	5.6	L	3.36	lb ai/A	PRE	A	1.7b	0.0c	99.0a	82.7abc	90.0ab
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V5	D					
6	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A	0.0b	0.0c	100.0a	92.7a	96.7a
	Halex GT Premix	4.38	SC	1.97	lb ai/A	V3	C					
	Atrazine 4L	4L		0.5	lb ai/A	V3	C					
	Nonionic Surfactant	100	L	0.25	% v/v	V3	C					
7	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A	0.0b	4.7b	100.0a	89.3ab	96.7a
	Realm Q Premix	38.7	WG	0.097	lb ai/A	V3	C					
	Atrazine 4L	4L		0.5	lb ai/A	V3	C					
	Nonionic Surfactant	100	L	0.25	% v/v	V3	C					
8	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A	0.0b	0.0c	100.0a	73.3cd	73.3c
	Atrazine 4L	4L		1.25	lb ai/A	V3	C					
	Prowl H2O.....pendimethalin	3.8	CS	1.42	lb ai/A	V3	C					
	Nonionic Surfactant	100	L	0.25	% v/v	V3	C					
9	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A	0.0b	0.0c	100.0a	76.7bcd	78.3bc
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V3	C					
10	Atrazine 4L	4L		1.25	lb ai/A	PRE	A	0.0b	0.0c	99.0a	63.3d	73.3c
	Prowl H2O.....pendimethalin	3.8	CS	1.42	lb ai/A	PRE	A					
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V3	C					
11	Halex GT Premix	4.38	SC	1.97	lb ai/A	V1-2	B		0.0c	100.0a	83.3abc	86.7abc
	Atrazine 4L	4L		1	lb ai/A	V1-2	B					
	Nonionic Surfactant	100	L	0.25	% v/v	V1-2	B					
12	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V1-2	B		4.0b	100.0a	82.7abc	85.0abc
	Bicep II Magnum Premix	5.5	L	2.2	lb ai/A	V1-2	B					
	Prowl H2O.....pendimethalin	3.8	CS	1.42	lb ai/A	V1-2	B					
	LSD (P=.05)							2.17	3.05	1.22	14.83	15.97
	Standard Deviation							1.26	1.80	0.72	8.76	9.43
	CV							90.25	67.45	0.79	12.22	12.15
	Replicate F							0.188	0.644	0.478	0.604	0.242
	Replicate Prob(F)							0.8303	0.5348	0.6262	0.5555	0.7871
	Treatment F							28.251	41.892	4766.087	22.788	22.611
	Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							ZEAMX	ZEAMX	
Crop Code							Field	Field	
Weed or Crop Name							Corn	Corn	
Weed or Crop Name							Lodging	Yield	
Rating Data Type							0-4scale	Bu/A	
Rating Unit							09/15/11	09/15/11	
Rating Date									
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code		
1	Untreated Check							1.33 c	196.5 a
2	Lumax Premix	3.95	SC	2.47	lb ai/A	PRE	A	3.00 ab	204.2 a
	Atrazine 4L	4	L	0.75	lb ai/A	PRE	A		
3	Bicep II Magnum Premix	5.5	L	2.9	lb ai/A	PRE	A	2.00 bc	195.9 a
	Resolve.....rimsulfuron	25	WG	0.0156	lb ai/A	PRE	A		
4	Bicep II Magnum Premix	5.5	L	2.9	lb ai/A	PRE	A	3.00 ab	178.6 a
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V5	D		
5	Harness Xtra 5.6L Premix	5.6	L	3.36	lb ai/A	PRE	A	2.33 bc	198.0 a
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V5	D		
6	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A	2.33 bc	195.8 a
	Halex GT Premix	4.38	SC	1.97	lb ai/A	V3	C		
	Atrazine 4L	4	L	0.5	lb ai/A	V3	C		
	Nonionic Surfactant	100	L	0.25	% v/v	V3	C		
7	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A	2.33 bc	196.9 a
	Realm Q Premix	38.7	WG	0.097	lb ai/A	V3	C		
	Atrazine 4L	4	L	0.5	lb ai/A	V3	C		
	Nonionic Surfactant	100	L	0.25	% v/v	V3	C		
8	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A	4.00 a	188.5 a
	Atrazine 4L	4	L	1.25	lb ai/A	V3	C		
	Prowl H2O.....pendimethalin	3.8	CS	1.42	lb ai/A	V3	C		
	Nonionic Surfactant	100	L	0.25	% v/v	V3	C		
9	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A	2.50 b	190.1 a
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V3	C		
10	Atrazine 4L	4	L	1.25	lb ai/A	PRE	A	3.67 a	197.3 a
	Prowl H2O.....pendimethalin	3.8	CS	1.42	lb ai/A	PRE	A		
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V3	C		
11	Halex GT Premix	4.38	SC	1.97	lb ai/A	V1-2	B	2.00 bc	212.0 a
	Atrazine 4L	4	L	1	lb ai/A	V1-2	B		
	Nonionic Surfactant	100	L	0.25	% v/v	V1-2	B		
12	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V1-2	B	3.67 a	212.3 a
	Bicep II Magnum Premix	5.5	L	2.2	lb ai/A	V1-2	B		
	Prowl H2O.....pendimethalin	3.8	CS	1.42	lb ai/A	V1-2	B		
LSD (P=.05)							1.131	27.03	
Standard Deviation							0.668	15.96	
CV							24.92	8.1	
Replicate F							0.762	14.923	
Replicate Prob(F)							0.4785	0.0001	
Treatment F							4.293	1.043	
Treatment Prob(F)							0.0018	0.4451	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Comparison of Approaches to Weed Control in Field Corn

Trial ID: CRN10b11 Cooperator:
 Location: Newark Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Crabgrass Species	DIGSS	Digitaria sp.
2.	Common Lambsquarters	CHEAL	Chenopodium album L.

Crop 1: Field Corn **ZEAMX** **Variety:** A5337EVT3 & F2F665
Planting Date: 05/02/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 30000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Medium
Soil Temperature: 73 F **Soil Moisture:** Moist **Emergence Date:** 05/11/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK **Tillage Type:** Conventional Tillage

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	05/06/11	05/24/11	05/24/11	06/06/11
Time of Day:	9:30 am	1:30 pm	1:30 pm	12:30 pm
Application Method:	Spray	Spray	Spray	Spray
Application Timing:	PRE	V1-2	V3	V5
Applic. Placement:	Brdcst	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	60 F	86 F	86 F	78 F
% Relative Humidity:	57	41	41	52
Wind Velocity, Unit:	0 mph	4 mph	4 mph	2 mph
Wind Direction:	N/A	West	West	Northeast
Dew Presence (Y/N):	N	N	N	N
Soil Temp., Unit:	56 F	85 F	85 F	77 F
Soil Surf. Moisture:	Dry	Moist	Moist	Dry
Root Zone Moisture:	Moist	Moist	Moist	Dry
Leaf Surf. Moisture:	N/A	Dry	Dry	Dry
% Cloud Cover:	10	30	30	15

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code:	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Growth Stage:		V3	V3	V5
Height, Unit:		6 in	6 in	9 in
Crop Health:		Good	Good	Good

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code:	DIGSS	DIGSS	DIGSS	DIGSS
Growth Stage:		3lf-1til		3-4lf
Height, Unit:		2 in		3 in
Density, Unit:		70-100 m2		0-30 m2
Weed 2 Code:	CHEAL	CHEAL	CHEAL	CHEAL
Growth Stage:		Vegetative	Vegetative	Vegetative
Height, Unit:		2 in	2 in	3 in
Density, Unit:		0-1 m2	0-1 m2	0-1 m2

APPLICATION EQUIPMENT				
	A	B	C	D
Appl. Equipment:	Backpack	Backpack	Backpack	Backpack
Operating Pressure:	31 psi	31 psi	31 psi	31 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002	11002
Nozzle Spacing, Unit:	18 in	18 in	18 in	18 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	17 in	22 in	22 in	28 in
Ground Speed, Unit:	3 mph	3 mph	3 mph	3 mph
Carrier:	water	water	water	water
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa	20 gpa
Propellant:	CO2	CO2	CO2	CO2

Trial Comments

5-24-11 No crop injury was observed from any treatments.

6/6/11 - Injury did not appear to differ by hybrid. Treatment 12 caused about 15% leaf burn at time of application.

6/24/11 - Very heavy density of crabgrass in untreated check. Lambsquarter pressure was good.

Comparison of Approaches to Weed Control in Field Corn											
Trial ID: CRN10b11		Cooperator:									
Location: Newark		Investigator: Mark VanGessel									
Weed Code	Crop Code	Weed or Crop Name	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date	ZEAMX Field Corn Stunting % 06/06/11	CHEAL Common Lambqtrs Control % 06/06/11	DIGSA Large Crabgras Control % 06/06/11	MEDSA Vol Alfalfa 0=absent 1=presen 06/06/11	CHEAL Common Lambqtrs Control % 06/24/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code				
1	Untreated Check							0.0c	0.0c	0.0c	1.0a 0.0b
2	Lumax Premix	3.95	SC	2.47	lb ai/A	PRE	A	0.0c	100.0a	100.0a	0.0b 100.0a
	Atrazine 4L	4L		0.75	lb ai/A	PRE	A				
3	Bicep II Magnum Premix	5.5	L	2.9	lb ai/A	PRE	A	10.3a	100.0a	100.0a	0.0b 96.7a
	Resolve.....rimsulfuron	25	WG	0.0156	lb ai/A	PRE	A				
4	Bicep II Magnum Premix	5.5	L	2.9	lb ai/A	PRE	A	0.0c	87.3b	100.0a	0.0b 100.0a
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V5	D				
5	Harness Xtra 5.6L Premix	5.6	L	3.36	lb ai/A	PRE	A	0.0c	95.0ab	96.7b	0.3b 100.0a
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V5	D				
6	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A	0.0c	100.0a	100.0a	0.0b 100.0a
	Halex GT Premix	4.38	SC	1.97	lb ai/A	V3	C				
	Atrazine 4L	4L		0.5	lb ai/A	V3	C				
	Nonionic Surfactant	100	L	0.25	% v/v	V3	C				
7	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A	0.0c	100.0a	100.0a	0.0b 96.7a
	Realm Q Premix	38.7	WG	0.097	lb ai/A	V3	C				
	Atrazine 4L	4L		0.5	lb ai/A	V3	C				
	Nonionic Surfactant	100	L	0.25	% v/v	V3	C				
8	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A	0.0c	100.0a	100.0a	0.0b 96.7a
	Atrazine 4L	4L		1.25	lb ai/A	V3	C				
	Prowl H2O.....pendimethalin	3.8	CS	1.42	lb ai/A	V3	C				
	Nonionic Surfactant	100	L	0.25	% v/v	V3	C				
9	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A	0.0c	100.0a	100.0a	0.3b 96.7a
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V3	C				
10	Atrazine 4L	4L		1.25	lb ai/A	PRE	A	0.0c	100.0a	100.0a	0.0b 100.0a
	Prowl H2O.....pendimethalin	3.8	CS	1.42	lb ai/A	PRE	A				
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V3	C				
11	Halex GT Premix	4.38	SC	1.97	lb ai/A	V1-2	B	0.0c	100.0a	100.0a	0.0b 100.0a
	Atrazine 4L	4L		1	lb ai/A	V1-2	B				
	Nonionic Surfactant	100	L	0.25	% v/v	V1-2	B				
12	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V1-2	B	2.3c	100.0a	100.0a	0.0b 100.0a
	Bicep II Magnum Premix	5.5	L	2.2	lb ai/A	V1-2	B				
	Prowl H2O.....pendimethalin	3.8	CS	1.42	lb ai/A	V1-2	B				
13	Capreno Premix	3.45	SC	0.081	lb ai/A	PRE	A	7.3b	100.0a	100.0a	0.3b 100.0a
	Atrazine 4L	4L		1	lb ai/A	PRE	A				
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V3	C				
14	Capreno Premix	3.45	SC	0.081	lb ai/A	PRE	A	7.3b	100.0a	100.0a	0.0b 100.0a
	Atrazine 4L	4L		1	lb ai/A	PRE	A				
	Dual II Magnum..s-metolachlor	7.64	E	0.477	lb ai/A	PRE	A				
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V3	C				
LSD (P=.05)								2.49	8.05	2.59	0.45 5.33
Standard Deviation								1.48	4.79	1.54	0.27 3.17
CV								75.96	5.23	1.67	187.08 3.45
Replicate F								3.973	0.766	1.000	1.000 0.236
Replicate Prob(F)								0.0312	0.4752	0.3816	0.3816 0.7912
Treatment F								17.459	92.353	896.385	3.385 209.091
Treatment Prob(F)								0.0001	0.0001	0.0001	0.0039 0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Weed Code							DIGSA
Crop Code							
Weed or Crop Name							Large
Weed or Crop Name							Crabgrass
Rating Data Type							Control
Rating Unit							%
Rating Date							06/24/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code
1	Untreated Check						0.0e
2	Lumax Premix	3.95	SC	2.47	lb ai/A	PRE	A
	Atrazine 4L	4	L	0.75	lb ai/A	PRE	A
3	Bicep II Magnum Premix	5.5	L	2.9	lb ai/A	PRE	A
	Resolve.....rimsulfuron	25	WG	0.0156	lb ai/A	PRE	A
4	Bicep II Magnum Premix	5.5	L	2.9	lb ai/A	PRE	A
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V5	D
5	Harness Xtra 5.6L Premix	5.6	L	3.36	lb ai/A	PRE	A
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V5	D
6	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A
	Halex GT Premix	4.38	SC	1.97	lb ai/A	V3	C
	Atrazine 4L	4	L	0.5	lb ai/A	V3	C
	Nonionic Surfactant	100	L	0.25	% v/v	V3	C
7	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A
	Realm Q Premix	38.7	WG	0.097	lb ai/A	V3	C
	Atrazine 4L	4	L	0.5	lb ai/A	V3	C
	Nonionic Surfactant	100	L	0.25	% v/v	V3	C
8	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A
	Atrazine 4L	4	L	1.25	lb ai/A	V3	C
	Prowl H2O.....pendimethalin	3.8	CS	1.42	lb ai/A	V3	C
	Nonionic Surfactant	100	L	0.25	% v/v	V3	C
9	Bicep II Magnum Premix	5.5	L	1.79	lb ai/A	PRE	A
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V3	C
10	Atrazine 4L	4	L	1.25	lb ai/A	PRE	A
	Prowl H2O.....pendimethalin	3.8	CS	1.42	lb ai/A	PRE	A
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V3	C
11	Halex GT Premix	4.38	SC	1.97	lb ai/A	V1-2	B
	Atrazine 4L	4	L	1	lb ai/A	V1-2	B
	Nonionic Surfactant	100	L	0.25	% v/v	V1-2	B
12	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V1-2	B
	Bicep II Magnum Premix	5.5	L	2.2	lb ai/A	V1-2	B
	Prowl H2O.....pendimethalin	3.8	CS	1.42	lb ai/A	V1-2	B
13	Capreno Premix	3.45	SC	0.081	lb ai/A	PRE	A
	Atrazine 4L	4	L	1	lb ai/A	PRE	A
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V3	C
14	Capreno Premix	3.45	SC	0.081	lb ai/A	PRE	A
	Atrazine 4L	4	L	1	lb ai/A	PRE	A
	Dual II Magnum..s-metolachlor	7.64	E	0.477	lb ai/A	PRE	A
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V3	C
LSD (P=.05)							5.73
Standard Deviation							3.41
CV							3.8
Replicate F							0.681
Replicate Prob(F)							0.5150
Treatment F							176.863
Treatment Prob(F)							0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Postemergence Control of Ryegrass in Corn

Trial ID: CRN11-11 Cooperator:
 Location: Field #36 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Annual Ryegrass	LOLMU	Lolium multiflorum Lam.

Crop 1: Field Corn **ZEAMX** **Variety:** H5461VT3
Planting Date: 04/26/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 18000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Medium/Trashy
Soil Temperature: 80 F **Soil Moisture:** Moist **Emergence Date:** 05/05/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Soybean Stubble

Trial Initiation Comments: Annual Ryegrass at 15 lb/A was broadcast seeded on 10-26-10. Volunteer ryegrass was present from previous years crop.

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 30 gal/A 30% UAN solution (98 lb N) at layby. Total N applied was 123 lb/A.

SOIL DESCRIPTION

% Sand: 77 **% OM:** 2.3 **Texture:** sandy loam
% Silt: 12 **pH:** 5.7
% Clay: 11 **CEC:** 6.7 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	04/19/11	
Time of Day:	10:00 am	
Application Method:	Spray	
Application Timing:	15EPP	
Applic. Placement:	Brdcst	
Air Temp., Unit:	67 F	
% Relative Humidity:	51	
Wind Velocity, Unit:	3 mph	
Wind Direction:	Southwest	
Dew Presence (Y/N):	N	
Soil Temp., Unit:	65 F	
Soil Surf. Moisture:	Moist	
Root Zone Moisture:	Moist	
Leaf Surf. Moisture:	Dry	
% Cloud Cover:	80	

WEED STAGE AT EACH APPLICATION		
	A	B
Weed 1 Code:	LOLMU	LOLMU
Growth Stage:	vegetative	
Height, Unit:	10 in	
Density,Unit:	10-60 m2	

APPLICATION EQUIPMENT		
	A	B
Appl. Equipment:	Tractor	
Operating Pressure:	40 psi	
Nozzle Type:	AIRMIX	
Nozzle Size:	11002	
Nozzle Spacing, Unit:	20 in	
Boom Length, Unit:	6 nozl	
Boom Height, Unit:	26 in	
Ground Speed, Unit:	3 mph	
Carrier:	water	
Spray Volume, Unit:	20 gpa	
Propellant:	Comp. Air	

Trial Comments		
The 21DAP treatments were not sprayed.		

Postemergence Control of Ryegrass in Corn

Trial ID: CRN11b-11 Cooperator:
 Location: Field #36 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Annual Ryegrass	LOLMU	Lolium multiflorum Lam.

Crop 1: Field Corn **ZEAMX** **Variety:** H5461VT3
Planting Date: 04/26/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 18000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Medium/Trashy
Soil Temperature: 80 F **Soil Moisture:** Moist **Emergence Date:** 05/05/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Soybean Stubble

Trial Initiation Comments: Annual Ryegrass at 15 lb/A was broadcast seeded on 10-26-10. Volunteer ryegrass was present from previous year's crop.

SOIL DESCRIPTION

% Sand: 77 **% OM:** 2.3 **Texture:** sandy loam
% Silt: 12 **pH:** 5.7
% Clay: 11 **CEC:** 6.7 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	04/19/11	05/26/11
Time of Day:	10:00 am	12:00 pm
Application Method:	Spray	Spray
Application Timing:	15EPP	3WAP
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	67 F	87 F
% Relative Humidity:	51	57
Wind Velocity, Unit:	3 mph	3 mph
Wind Direction:	Southwest	Southwest
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	65 F	86 F
Soil Surf. Moisture:	Moist	Dry
Root Zone Moisture:	Moist	Moist
Leaf Surf. Moisture:	Dry	Dry
% Cloud Cover:	80	25

WEED STAGE AT EACH APPLICATION		
	A	B
Weed 1 Code:	LOLMU	LOLMU
Growth Stage:	vegetative	vegetative
Height, Unit:	10 in	18 in
Density, Unit:	10-60 m ²	50-100 m ²

APPLICATION EQUIPMENT		
	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	26 in	34 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air

Trial Comments

Since POST treatments were not made to Corn11-11, these treatments were sprayed over that trial.

06/14/11 Treatments 1 and 2 provided good control of ryegrass. Treatment 3 provided only fair control of ryegrass, but excellent control of horseweed.

Postemergence Control of Ryegrass in Corn						
Trial ID: CRN11b-11 Cooperator:						
Location: Field #36 Investigator: Mark VanGessel						
Weed Code						LOLMG
Weed or Crop Name						Annual
Weed or Crop Name						Ryegrass
Rating Data Type						Control
Rating Unit						%
Rating Date						06/14/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code
1	Touchdown HiTech..glyphosate	5	SL	1.25 lb ae/A	3 WAP	B
	Nonionic Surfactant	100	L	0.25 % v/v	3 WAP	B
2	Touchdown HiTech..glyphosate	5	SL	0.75 lb ae/A	3 WAP	B
	Resolve.....rimsulfuron	25	WG	0.0156 lb ai/A	3 WAP	B
	Nonionic Surfactant	100	L	0.25 % v/v	3 WAP	B
3	Impact.....topramezone	2.8	SC	0.0219 lb ai/A	3 WAP	B
	Atrazine 4L	4	L	0.5 lb ai/A	3 WAP	B
	Methylated Seed Oil	100	L	1 % v/v	3 WAP	B
	30% Urea Ammonium Nitrate	100	L	1.5 % v/v	3 WAP	B
LSD (P=.05)						1.31
Standard Deviation						0.58
CV						0.72
Replicate F						1.000
Replicate Prob(F)						0.4444
Treatment F						675.000
Treatment Prob(F)						0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Preplant Burndown of Ryegrass

Trial ID: CRN12-11 Cooperator:
 Location: Field #36 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Annual Ryegrass	LOLMU	Lolium multiflorum Lam.
2.	Mouseear Cress	ARBTH	Arabidopsis thaliana (L.) Heynh.

Crop 1: Field Corn **ZEAMX** **Variety:** H5461VT3
Planting Date: 04/26/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 18000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Medium/Trashy
Soil Temperature: 80 F **Soil Moisture:** Moist **Emergence Date:** 05/05/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Soybean Stubble

Trial Initiation Comments: Annual Ryegrass at 15 lb/A was broadcast seeded on 10-26-10. Volunteer ryegrass was present from previous year's crop.

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 30 gal/A 30% UAN solution (98 lb N) at layby. Total N applied was 123 lb/A.

SOIL DESCRIPTION

% Sand: 77 **% OM:** 2.3 **Texture:** sandy loam
% Silt: 12 **pH:** 5.7
% Clay: 11 **CEC:** 6.7 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	04/19/11
Time of Day:	10:00 am
Application Method:	Spray
Application Timing:	15EPP
Applic. Placement:	Brdcst
Air Temp., Unit:	67 F
% Relative Humidity:	51
Wind Velocity, Unit:	3 mph
Wind Direction:	Southwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	65 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	80

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	LOLMU
Growth Stage:	vegetative
Height, Unit:	10 in
Density, Unit:	10-60 m ²
Weed 2 Code:	ARBTH
Growth Stage:	seed
Height, Unit:	10 in
Density, Unit:	5-50 m ²

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	26 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

6/2/11 - Rating based on ryegrass desiccation and seed production.

Preplant Burndown of Ryegrass							LOLMU	LOLMU	LOLMU	
Trial ID: CRN12-11 Cooperator:							Annual	Annual	Annual	
Location: Field #36 Investigator: Mark VanGessel							Ryegrass	Ryegrass	Ryegrass	
Weed Code							Control	Control	Control	
Weed or Crop Name							%	%	%	
Rating Data Type							05/10/11	06/02/11	06/14/11	
Rating Unit										
Rating Date										
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Code			
1	Untreated Check							0.0e	0.0f	0.0d
2	Touchdown HiTech..glyphosate	5 SL		0.75 lb ae/A	15EPP A			81.7 ab	74.3 de	68.3 bc
	2,4-D ester	3.8L		0.475 lb ae/A	15EPP A					
	Nonionic Surfactant	100L		0.25 % v/v	15EPP A					
3	Touchdown HiTech..glyphosate	5 SL		0.75 lb ae/A	15EPP A			87.7 ab	94.0 a	97.0 a
	2,4-D ester	3.8L		0.475 lb ae/A	15EPP A					
	Resolve.....rimsulfuron	25WG		0.0156 lb ai/A	15EPP A					
	Nonionic Surfactant	100L		0.25 % v/v	15EPP A					
4	Touchdown HiTech..glyphosate	5 SL		0.75 lb ae/A	15EPP A			65.0 d	71.7 e	63.3 c
	2,4-D ester	3.8L		0.475 lb ae/A	15EPP A					
	Bicep II Magnum Premix	5.5L		2.75 lb ai/A	15EPP A					
	Nonionic Surfactant	100L		0.25 % v/v	15EPP A					
5	Touchdown HiTech..glyphosate	5 SL		0.75 lb ae/A	15EPP A			71.7 cd	80.0 cde	78.3 b
	2,4-D ester	3.8L		0.475 lb ae/A	15EPP A					
	Resolve.....rimsulfuron	25WG		0.0156 lb ai/A	15EPP A					
	Bicep II Magnum Premix	5.5L		2.75 lb ai/A	15EPP A					
	Nonionic Surfactant	100L		0.25 % v/v	15EPP A					
6	Touchdown HiTech..glyphosate	5 SL		0.75 lb ae/A	15EPP A			63.3 d	74.3 de	73.3 bc
	2,4-D ester	3.8L		0.475 lb ae/A	15EPP A					
	Lumax Premix	3.95SC		2.47 lb ai/A	15EPP A					
	Nonionic Surfactant	100L		0.25 % v/v	15EPP A					
7	Touchdown HiTech..glyphosate	5 SL		1 lb ae/A	15EPP A			83.3 ab	81.7 b-e	76.4 bc
	2,4-D ester	3.8L		0.475 lb ae/A	15EPP A					
	Nonionic Surfactant	100L		0.25 % v/v	15EPP A					
8	Touchdown HiTech..glyphosate	5 SL		1.25 lb ae/A	15EPP A			87.7 ab	91.3 ab	94.7 a
	2,4-D ester	3.8L		0.475 lb ae/A	15EPP A					
	Nonionic Surfactant	100L		0.25 % v/v	15EPP A					
9	Touchdown HiTech..glyphosate	5 SL		1 lb ae/A	15EPP A			78.3 bc	87.0 abc	76.7 bc
	2,4-D ester	3.8L		0.475 lb ae/A	15EPP A					
	Bicep II Magnum Premix	5.5L		2.75 lb ai/A	15EPP A					
	Nonionic Surfactant	100L		0.25 % v/v	15EPP A					
10	Select Max.....clethodim	1 EC		0.0625 lb ai/A	15EPP A			91.0 a	82.0 b-e	73.3 bc
	Touchdown HiTech..glyphosate	5 SL		0.75 lb ae/A	15EPP A					
	2,4-D ester	3.8L		0.475 lb ae/A	15EPP A					
	Nonionic Surfactant	100L		0.25 % v/v	15EPP A					

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							LOLMU	LOLMU	LOLMU	
Weed or Crop Name							Annual	Annual	Annual	
Weed or Crop Name							Ryegrass	Ryegrass	Ryegrass	
Rating Data Type							Control	Control	Control	
Rating Unit							%	%	%	
Rating Date							05/10/11	06/02/11	06/14/11	
Trt	Treatment	Form	Form	Rate	Grow	Appl				
No.	Name	Conc	Type	Rate	Unit	Stg	Code			
11	Select Max.....clethodim	1	EC	0.078 lb ai/A	15EPP	A		85.0 ab	75.3 de	73.3 bc
	Touchdown HiTech..glyphosate	5	SL	0.75 lb ae/A	15EPP	A				
	2,4-D ester	3.8	L	0.475 lb ae/A	15EPP	A				
	Nonionic Surfactant	100	L	0.25% v/v	15EPP	A				
12	Select Max.....clethodim	1	EC	0.094 lb ai/A	15EPP	A		90.0 a	82.7 bcd	75.0 bc
	Touchdown HiTech..glyphosate	5	SL	0.75 lb ae/A	15EPP	A				
	2,4-D ester	3.8	L	0.475 lb ae/A	15EPP	A				
	Nonionic Surfactant	100	L	0.25% v/v	15EPP	A				
LSD (P=.05)							9.96	10.74	13.41	
Standard Deviation							5.88	6.34	7.89	
CV							7.98	8.51	11.15	
Replicate F							3.957	0.001	2.151	
Replicate Prob(F)							0.0340	0.9993	0.1413	
Treatment F							54.245	44.653	28.407	
Treatment Prob(F)							0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Comparison of Approaches to Weed Control in No-Tillage Field Corn

Trial ID: CRN13-11 Cooperator:
 Location: Field #7 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Mouseear Chickweed	CERVU	Cerastium vulgatum L.
2.	Field Pansy	VIORA	Viola rafinesquii Greene
3.	Horseweed	ERICA	Erigeron canadensis L.
4.	Cutleaf Evening Primrose	OEOLA	Oenothera laciniata Hill
5.	Pigweed Species	AMASS	Amaranthus sp.
6.	Morningglory Species	IPOSS	Ipomoea sp.

Crop 1: Field Corn **ZEAMX** **Variety:** H5707VTS
Planting Date: 05/19/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 19000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Firm/Trashy
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/25/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Soybean Stubble

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 30 gal/A 30% UAN solution (98 lb N) at layby. Total N applied was 123 lb/A.

SOIL DESCRIPTION

% Sand: 78 **% OM:** 1.9 **Texture:** sandy loam
% Silt: 13 **pH:** 5.5
% Clay: 9 **CEC:** 5.7 **Fert. Level:** Medium

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown

APPLICATION DESCRIPTION

	A	B	C	D	E
Application Date:	04/29/11	05/11/11	05/19/11	06/02/11	06/08/11
Time of Day:	9:00 am	9:15 am	12:00 pm	9:30 am	3:00 pm
Application Method:	Spray	Spray	Spray	Spray	Spray
Application Timing:	21DPP	7DPP	PRE	V3	V5
Applic. Placement:	Brdcst	Brdcst	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	63 F	60 F	72 F	78 F	92 F
% Relative Humidity:	52	65	66	31	38
Wind Velocity, Unit:	2 mph	3 mph	2 mph	6 mph	4 mph
Wind Direction:	Northwest	Northeast	Southwest	Northwest	West
Dew Presence (Y/N):	Y	N	N	N	N
Soil Temp., Unit:	58 F	58 F	71 F	77 F	89 F
Soil Surf. Moisture:	Moist	Dry	Moist	Dry	Dry
Root Zone Moisture:	Moist	Moist	Moist	Dry	Dry
Leaf Surf. Moisture:	Moist	Dry	Dry	Dry	Dry
% Cloud Cover:	0	5	85	0	0

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E
Crop 1 Code:	ZEAMX	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Growth Stage:				V3	V5
Height, Unit:				5 in	13 in
Crop Health:				Good	MoistStrs

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E
Weed 1 Code:	CERVU	CERVU	CERVU	CERVU	CERVU
Growth Stage:	seed	seed	seed		
Height, Unit:	8 in	8 in	8 in		
Density,Unit:	80-240 m2	80-240 m2	80-240 m2		
Weed 2 Code:	VIORA	VIORA	VIORA	VIORA	VIORA
Growth Stage:	flower	late flwr	seed		
Height, Unit:	9 in	9 in	9 in		
Density,Unit:	0-80 m2	0-80 m2	0-80 m2		
Weed 3 Code:	ERICA	ERICA	ERICA	ERICA	ERICA
Growth Stage:	early bolt	bolting	bolting		
Height, Unit:	2 in	6 in	8 in		
Density,Unit:	0-10 m2	0-10 m2	0-10 m2		
Weed 4 Code:	OEOLA	OEOLA	OEOLA	OEOLA	OEOLA
Growth Stage:	early bolt	bolting	bolting		
Height, Unit:	4 in	6 in	7 in		
Density,Unit:	0-40 m2	0-40 m2	0-40 m2		
Weed 5 Code:	AMASS	AMASS	AMASS	AMASS	AMASS
Growth Stage:				vegetative	vegetative
Height, Unit:				4 in	5 in
Density,Unit:				0-5 m2	0-15 m2
Weed 6 Code:	IPOSS	IPOSS	IPOSS	IPOSS	IPOSS
Growth Stage:				cot-2 leaf	vegetative
Height, Unit:				2 in	3 in
Density,Unit:				0-5 m2	0-4 m2

APPLICATION EQUIPMENT

	A	B	C	D	E
Appl. Equipment:	Tractor	Tractor	Tractor	Tractor	Tractor
Operating Pressure:	40 psi	40 psi	40 psi	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002	11002	11002
Nozzle Spacing, Unit:	20 in	20 in	20 in	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	26 in	26 in	26 in	26 in	28 in
Ground Speed, Unit:	3 mph	3 mph	3 mph	3 mph	3 mph
Carrier:	water	water	water	water	water
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air	Comp. Air	Comp. Air	Comp. Air

Trial Comments

5/20/11 Good to excellent burndown control with all treatments.
In untreated check horseweed, vetch, and red stem filaree.

6/5/11 - Overall burndown control based on visible soil surface.
Stand is even across all treatments.

No injury observed from EPOST treatments.

Slight stunted corn due to moisture stress - depends on amount of winter annuals and position in the field. Worse in Rep 1 - 20%, Rep 2 - 10%, Rep 3 - 7%.

6/20/11 - Stunting due to moisture-stress (related to burndown treatments) not uniform across all reps.

Pigweed was present in untreated checks but no other treatments. Spurred Anoda beginning to emerge.

8/25/11 - Scale 0= none; 1= poor; 2= fair; 3= good; 4= excellent

Treatment 6 was most consistent weed control; 8, 10, 11 were also consistent; and treatment 9 was just behind these for consistency.

Spurred anoda was the predominate species observed in treatments 2, 6, 8, 9, 10, and 11

Comparison of Approaches to Weed Control in No-Tillage Field Corn										
Trial ID: CRN13-11 Cooperator:										
Location: Field #7 Investigator: Mark VanGessel										
Weed Code						ZEAMX	AMASS	IPOSS	ZEAMX	IPOSS
Crop Code						Field	Pigweed	Morngrly	Field	Morngrly
Weed or Crop Name						Corn	Species	Species	Corn	Species
Weed or Crop Name						Burndown	Control	Control	Stunting	Control
Rating Data Type						%	%	%	%	%
Rating Unit						06/05/11	06/05/11	06/05/11	06/20/11	06/20/11
Rating Date										
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code			
1	Untreated Check							0.0 f	0.0 c	0.0 c
	Roundup WeatherMax..glyphosate	4.5 AS		1.12 lb ai/A		7 DPP	B			21.7 a
2	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A		21 DPP	A	97.0 ab	100.0 a	95.7 ab
	Simazine.....simazine	4 L		1.5 lb ai/A		21 DPP	A			3.3 a
	Nonionic Surfactant	100 L		0.25 % v/v		21 DPP	A			83.7 b
	Lumax Premix	3.95 SC		2.47 lb ai/A		PRE	C			
	Atrazine 4L	4 L		0.75 lb ai/A		PRE	C			
	Crop Oil Concentrate	100 L		1.25 % v/v		PRE	C			
3	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A		21 DPP	A	97.7 a	100.0 a	94.3 ab
	Bicep II Magnum Premix	5.5 L		1.72 lb ai/A		21 DPP	A			5.0 a
	Nonionic Surfactant	100 L		0.25 % v/v		21 DPP	A			71.7 c
	Bicep II Magnum Premix	5.5 L		1.38 lb ai/A		PRE	C			
	Prowl H2O.....pendimethalin	3.8 CS		1.42 lb ai/A		PRE	C			
	Crop Oil Concentrate	100 L		1.25 % v/v		PRE	C			
4	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A		21 DPP	A	97.0 ab	93.3 b	89.3 b
	Bicep II Magnum Premix	5.5 L		2.9 lb ai/A		21 DPP	A			3.3 a
	Simazine.....simazine	4 L		1.5 lb ai/A		21 DPP	A			93.7 a
	Nonionic Surfactant	100 L		0.25 % v/v		21 DPP	A			
	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A		V-5	E			
5	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A		21 DPP	A	97.0 ab	100.0 a	91.0 ab
	Bicep II Magnum Premix	5.5 L		1.72 lb ai/A		21 DPP	A			0.0 a
	Nonionic Surfactant	100 L		0.25 % v/v		21 DPP	A			94.7 a
	Lexar Premix	3.7 FL		1.57 lb ai/A		PRE	C			
	Crop Oil Concentrate	100 L		1.25 % v/v		PRE	C			
	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A		V-5	E			
6	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A		21 DPP	A	94.0 abc	100.0 a	90.0 b
	Simazine.....simazine	4 L		1.5 lb ai/A		21 DPP	A			5.0 a
	Nonionic Surfactant	100 L		0.25 % v/v		21 DPP	A			95.3 a
	Halex GT Premix	4.38 SC		1.97 lb ai/A		V-3	D			
	Atrazine 4L	4 L		0.5 lb ai/A		V-3	D			
	Nonionic Surfactant	100 L		0.25 % v/v		V-3	D			
	Dry Ammonium Sulfate	100 D		1.02 % w/v		V-3	D			
7	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A		7 DPP	B	89.0 de	100.0 a	100.0 a
	Lexar Premix	3.7 FL		3.24 lb ai/A		7 DPP	B			23.3 a
	Simazine.....simazine	4 L		1.5 lb ai/A		7 DPP	B			93.0 ab
	Nonionic Surfactant	100 L		0.25 % v/v		7 DPP	B			

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

							ZEAMX	AMASS	IPOSS	ZEAMX	IPOSS
Weed Code							Field	Pigweed	Morninglry	Field	Morninglry
Crop Code							Corn	Species	Species	Corn	Species
Weed or Crop Name							Burndown	Control	Control	Stunting	Control
Weed or Crop Name							%	%	%	%	%
Rating Data Type							06/05/11	06/05/11	06/05/11	06/20/11	06/20/11
Rating Unit											
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
8	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	7 DPP	B	90.7 cde	100.0 a	100.0 a	23.3 a	93.0 ab
	Simazine.....simazine	4 L		1.5 lb ai/A	7 DPP	B					
	Nonionic Surfactant	100 L		0.25 % v/v	7 DPP	B					
	Lumax Premix	3.95 SC		2.47 lb ai/A	PRE	C					
	Atrazine 4L	4 L		0.75 lb ai/A	PRE	C					
	Crop Oil Concentrate	100 L		1.25 % v/v	PRE	C					
9	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	7 DPP	B	92.3 bcd	100.0 a	100.0 a	30.0 a	95.3 a
	Lumax Premix	3.95 SC		2.47 lb ai/A	7 DPP	B					
	Atrazine 4L	4 L		0.75 lb ai/A	7 DPP	B					
	Nonionic Surfactant	100 L		0.25 % v/v	7 DPP	B					
	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	V-5	E					
10	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	7 DPP	B	86.0 e	100.0 a	95.0 ab	20.0 a	94.3 a
	Simazine.....simazine	4 L		1 lb ai/A	7 DPP	B					
	Nonionic Surfactant	100 L		0.25 % v/v	7 DPP	B					
	Halex GT Premix	4.38 SC		1.97 lb ai/A	V-3	D					
	Atrazine 4L	4 L		0.5 lb ai/A	V-3	D					
	Nonionic Surfactant	100 L		0.25 % v/v	V-3	D					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	V-3	D					
11	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	7 DPP	B	91.7 cd	100.0 a	91.0 ab	13.3 a	95.3 a
	Bicep II Magnum Premix	5.5 L		2.2 lb ai/A	7 DPP	B					
	Nonionic Surfactant	100 L		0.25 % v/v	7 DPP	B					
	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	V-3	D					
	Callisto.....mesotrione	4 SC		0.094 lb ai/A	V-3	D					
12	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	7 DPP	B	90.7 cde	100.0 a	100.0 a	11.7 a	91.7 ab
	Atrazine 4L	4 L		1.5 lb ai/A	7 DPP	B					
	Simazine.....simazine	4 L		1.5 lb ai/A	7 DPP	B					
	Nonionic Surfactant	100 L		0.25 % v/v	7 DPP	B					
	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	V-5	E					
LSD (P=.05)							4.82	5.64	9.99	19.90	9.70
Standard Deviation							2.85	3.33	5.90	11.75	5.73
CV							3.34	3.66	6.77	88.13	6.86
Replicate F							5.629	1.000	0.748	4.089	0.286
Replicate Prob(F)							0.0106	0.3840	0.4852	0.0309	0.7544
Treatment F							272.008	223.273	66.458	2.195	67.588
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0561	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							AMAPA	ANVCR	IPOSS	DIGSA	TTTTT
Crop Code							Palmer	Spurred	Morngrly	Large	Overall
Weed or Crop Name							Amaranth	Anoda	Species	Crabgras	Weed
Weed or Crop Name							Control	Control	Control	Control	Control
Rating Data Type							%	%	%	%	Scale
Rating Unit							07/08/11	07/08/11	07/08/11	07/08/11	08/25/11
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg					
1	Untreated Check						0.0c	0.0d	0.0e	0.0c	0.00d
	Roundup WeatherMax..glyphosate	4.5	AS	1.12lb ai/A	7 DPP	B					
2	Gramoxone Inteon..paraquat	2	SL	0.5lb ai/A	21 DPP	A	70.0b	78.3abc	75.0c	100.0a	2.50ab
	Simazine.....simazine	4	L	1.5lb ai/A	21 DPP	A					
	Nonionic Surfactant	100	L	0.25% v/v	21 DPP	A					
	Lumax Premix	3.95	SC	2.47lb ai/A	PRE	C					
	Atrazine 4L	4	L	0.75lb ai/A	PRE	C					
	Crop Oil Concentrate	100	L	1.25% v/v	PRE	C					
3	Gramoxone Inteon..paraquat	2	SL	0.5lb ai/A	21 DPP	A	96.7ab	63.3c	53.3d	90.0b	1.17c
	Bicep II Magnum Premix	5.5	L	1.72lb ai/A	21 DPP	A					
	Nonionic Surfactant	100	L	0.25% v/v	21 DPP	A					
	Bicep II Magnum Premix	5.5	L	1.38lb ai/A	PRE	C					
	Prowl H2O.....pendimethalin	3.8	CS	1.42lb ai/A	PRE	C					
	Crop Oil Concentrate	100	L	1.25% v/v	PRE	C					
4	Gramoxone Inteon..paraquat	2	SL	0.5lb ai/A	21 DPP	A	78.3ab	73.3abc	76.7bc	100.0a	1.33c
	Bicep II Magnum Premix	5.5	L	2.9lb ai/A	21 DPP	A					
	Simazine.....simazine	4	L	1.5lb ai/A	21 DPP	A					
	Nonionic Surfactant	100	L	0.25% v/v	21 DPP	A					
	Roundup WeatherMax..glyphosate	4.5	AS	0.77lb ae/A	V-5	E					
5	Gramoxone Inteon..paraquat	2	SL	0.5lb ai/A	21 DPP	A	100.0a	81.1ab	90.0abc	100.0a	2.50ab
	Bicep II Magnum Premix	5.5	L	1.72lb ai/A	21 DPP	A					
	Nonionic Surfactant	100	L	0.25% v/v	21 DPP	A					
	Lexar Premix	3.7	FL	1.57lb ai/A	PRE	C					
	Crop Oil Concentrate	100	L	1.25% v/v	PRE	C					
	Roundup WeatherMax..glyphosate	4.5	AS	0.77lb ae/A	V-5	E					
6	Gramoxone Inteon..paraquat	2	SL	0.5lb ai/A	21 DPP	A	100.0a	84.7ab	96.0ab	100.0a	3.00a
	Simazine.....simazine	4	L	1.5lb ai/A	21 DPP	A					
	Nonionic Surfactant	100	L	0.25% v/v	21 DPP	A					
	Halex GT Premix	4.38	SC	1.97lb ai/A	V-3	D					
	Atrazine 4L	4	L	0.5lb ai/A	V-3	D					
	Nonionic Surfactant	100	L	0.25% v/v	V-3	D					
	Dry Ammonium Sulfate	100	D	1.02% w/v	V-3	D					
7	Gramoxone Inteon..paraquat	2	SL	0.5lb ai/A	7 DPP	B	97.3a	70.0bc	91.7abc	97.3a	1.83bc
	Lexar Premix	3.7	FL	3.24lb ai/A	7 DPP	B					
	Simazine.....simazine	4	L	1.5lb ai/A	7 DPP	B					
	Nonionic Surfactant	100	L	0.25% v/v	7 DPP	B					

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							AMAPA	ANVCR	IPOSS	DIGSA	TTTTT
Crop Code											
Weed or Crop Name							Palmer	Spurred	Morngrly	Large	Overall
Weed or Crop Name							Amaranth	Anoda	Species	Crabgras	Weed
Rating Data Type							Control	Control	Control	Control	Control
Rating Unit							%	%	%	%	Scale
Rating Date							07/08/11	07/08/11	07/08/11	07/08/11	08/25/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
8	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	7 DPP	B	100.0 a	89.3 a	100.0 a	100.0 a	2.83 a
	Simazine.....simazine	4 L		1.5 lb ai/A	7 DPP	B					
	Nonionic Surfactant	100 L		0.25 % v/v	7 DPP	B					
	Lumax Premix	3.95 SC		2.47 lb ai/A	PRE	C					
	Atrazine 4L	4 L		0.75 lb ai/A	PRE	C					
	Crop Oil Concentrate	100 L		1.25 % v/v	PRE	C					
9	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	7 DPP	B	100.0 a	78.3 abc	81.7 abc	100.0 a	2.67 a
	Lumax Premix	3.95 SC		2.47 lb ai/A	7 DPP	B					
	Atrazine 4L	4 L		0.75 lb ai/A	7 DPP	B					
	Nonionic Surfactant	100 L		0.25 % v/v	7 DPP	B					
	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	V-5	E					
10	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	7 DPP	B	100.0 a	89.0 a	86.7 abc	100.0 a	2.83 a
	Simazine.....simazine	4 L		1 lb ai/A	7 DPP	B					
	Nonionic Surfactant	100 L		0.25 % v/v	7 DPP	B					
	Halex GT Premix	4.38 SC		1.97 lb ai/A	V-3	D					
	Atrazine 4L	4 L		0.5 lb ai/A	V-3	D					
	Nonionic Surfactant	100 L		0.25 % v/v	V-3	D					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	V-3	D					
11	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	7 DPP	B	100.0 a	75.0 abc	95.0 ab	100.0 a	2.83 a
	Bicep II Magnum Premix	5.5 L		2.2 lb ai/A	7 DPP	B					
	Nonionic Surfactant	100 L		0.25 % v/v	7 DPP	B					
	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	V-3	D					
	Callisto.....mesotrione	4 SC		0.094 lb ai/A	V-3	D					
12	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	7 DPP	B	94.0 ab	63.3 c	83.3 abc	100.0 a	1.50 c
	Atrazine 4L	4 L		1.5 lb ai/A	7 DPP	B					
	Simazine.....simazine	4 L		1.5 lb ai/A	7 DPP	B					
	Nonionic Surfactant	100 L		0.25 % v/v	7 DPP	B					
	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	V-5	E					
LSD (P=.05)							26.85	16.36	19.82	5.54	0.675
Standard Deviation							15.85	9.63	11.71	3.27	0.399
CV							18.36	13.66	15.12	3.61	19.15
Replicate F							1.694	6.670	4.856	0.321	3.667
Replicate Prob(F)							0.2069	0.0057	0.0179	0.7285	0.0422
Treatment F							9.972	18.331	16.407	230.284	16.048
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							ZEAMX Field Corn Yield Bu/A 09/27/11
Crop Code							
Weed or Crop Name							
Weed or Crop Name							
Rating Data Type							
Rating Unit							
Rating Date							
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code
1	Untreated Check						5.8 c
	Roundup WeatherMax..glyphosate	4.5	AS	1.12	lb ai/A	7 DPP B	
2	Gramoxone Inteon..paraquat	2	SL	0.5	lb ai/A	21 DPP A	36.9 ab
	Simazine.....simazine	4	L	1.5	lb ai/A	21 DPP A	
	Nonionic Surfactant	100	L	0.25	% v/v	21 DPP A	
	Lumax Premix	3.95	SC	2.47	lb ai/A	PRE C	
	Atrazine 4L	4	L	0.75	lb ai/A	PRE C	
	Crop Oil Concentrate	100	L	1.25	% v/v	PRE C	
3	Gramoxone Inteon..paraquat	2	SL	0.5	lb ai/A	21 DPP A	32.8 b
	Bicep II Magnum Premix	5.5	L	1.72	lb ai/A	21 DPP A	
	Nonionic Surfactant	100	L	0.25	% v/v	21 DPP A	
	Bicep II Magnum Premix	5.5	L	1.38	lb ai/A	PRE C	
	Prowl H2O.....pendimethalin	3.8	CS	1.42	lb ai/A	PRE C	
	Crop Oil Concentrate	100	L	1.25	% v/v	PRE C	
4	Gramoxone Inteon..paraquat	2	SL	0.5	lb ai/A	21 DPP A	29.9 b
	Bicep II Magnum Premix	5.5	L	2.9	lb ai/A	21 DPP A	
	Simazine.....simazine	4	L	1.5	lb ai/A	21 DPP A	
	Nonionic Surfactant	100	L	0.25	% v/v	21 DPP A	
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V-5 E	
5	Gramoxone Inteon..paraquat	2	SL	0.5	lb ai/A	21 DPP A	34.4 b
	Bicep II Magnum Premix	5.5	L	1.72	lb ai/A	21 DPP A	
	Nonionic Surfactant	100	L	0.25	% v/v	21 DPP A	
	Lexar Premix	3.7	FL	1.57	lb ai/A	PRE C	
	Crop Oil Concentrate	100	L	1.25	% v/v	PRE C	
	Roundup WeatherMax..glyphosate	4.5	AS	0.77	lb ae/A	V-5 E	
6	Gramoxone Inteon..paraquat	2	SL	0.5	lb ai/A	21 DPP A	36.1 ab
	Simazine.....simazine	4	L	1.5	lb ai/A	21 DPP A	
	Nonionic Surfactant	100	L	0.25	% v/v	21 DPP A	
	Halex GT Premix	4.38	SC	1.97	lb ai/A	V-3 D	
	Atrazine 4L	4	L	0.5	lb ai/A	V-3 D	
	Nonionic Surfactant	100	L	0.25	% v/v	V-3 D	
	Dry Ammonium Sulfate	100	D	1.02	% w/v	V-3 D	
7	Gramoxone Inteon..paraquat	2	SL	0.5	lb ai/A	7 DPP B	47.1 a
	Lexar Premix	3.7	FL	3.24	lb ai/A	7 DPP B	
	Simazine.....simazine	4	L	1.5	lb ai/A	7 DPP B	
	Nonionic Surfactant	100	L	0.25	% v/v	7 DPP B	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code						ZEAMX Field Corn Yield Bu/A 09/27/11
Crop Code						
Weed or Crop Name						
Weed or Crop Name						
Rating Data Type						
Rating Unit						
Rating Date						
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code
8	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A	7 DPP	B
	Simazine.....simazine	4	L	1.5 lb ai/A	7 DPP	B
	Nonionic Surfactant	100	L	0.25 % v/v	7 DPP	B
	Lumax Premix	3.95	SC	2.47 lb ai/A	PRE	C
	Atrazine 4L	4	L	0.75 lb ai/A	PRE	C
	Crop Oil Concentrate	100	L	1.25 % v/v	PRE	C
9	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A	7 DPP	B
	Lumax Premix	3.95	SC	2.47 lb ai/A	7 DPP	B
	Atrazine 4L	4	L	0.75 lb ai/A	7 DPP	B
	Nonionic Surfactant	100	L	0.25 % v/v	7 DPP	B
	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	V-5	E
10	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A	7 DPP	B
	Simazine.....simazine	4	L	1 lb ai/A	7 DPP	B
	Nonionic Surfactant	100	L	0.25 % v/v	7 DPP	B
	Halex GT Premix	4.38	SC	1.97 lb ai/A	V-3	D
	Atrazine 4L	4	L	0.5 lb ai/A	V-3	D
	Nonionic Surfactant	100	L	0.25 % v/v	V-3	D
	Dry Ammonium Sulfate	100	D	1.02 % w/v	V-3	D
11	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A	7 DPP	B
	Bicep II Magnum Premix	5.5	L	2.2 lb ai/A	7 DPP	B
	Nonionic Surfactant	100	L	0.25 % v/v	7 DPP	B
	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	V-3	D
	Callisto.....mesotrione	4	SC	0.094 lb ai/A	V-3	D
12	Gramoxone Inteon..paraquat	2	SL	0.5 lb ai/A	7 DPP	B
	Atrazine 4L	4	L	1.5 lb ai/A	7 DPP	B
	Simazine.....simazine	4	L	1.5 lb ai/A	7 DPP	B
	Nonionic Surfactant	100	L	0.25 % v/v	7 DPP	B
	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	V-5	E
LSD (P=.05)						11.34
Standard Deviation						6.69
CV						19.72
Replicate F						6.247
Replicate Prob(F)						0.0071
Treatment F						6.620
Treatment Prob(F)						0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Early Postemergence Cadet in Field Corn

Trial ID: CRN14-11 Cooperator: FMC
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Morningglory Species	IPOSS	Ipomoea sp.
2.	Palmer Amaranth	AMAPA	Amaranthus palmeri S.Wats.
3.	Annual Grasses	GGGAN	
4.	Common Ragweed	AMBEL	Ambrosia artemisifolia L.

Crop 1: Field Corn **ZEAMX** **Variety:** H5753VTS
Planting Date: 05/10/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Medium
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/17/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Chisel Plowed, Disked & Field Cultivated

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.

SOIL DESCRIPTION

% Sand: 81 **% OM:** 1.2 **Texture:** loamy sand
% Silt: 12 **pH:** 5.9
% Clay: 7 **CEC:** 4.5 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	05/06/11	05/25/11
Time of Day:	3:30 pm	10:30 am
Application Method:	Spray	Spray
Application Timing:	7EPP	1-3"wds
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	69 F	79 F
% Relative Humidity:	35	62
Wind Velocity, Unit:	8 mph	1 mph
Wind Direction:	Southwest	East
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	70 F	79 F
Soil Surf. Moisture:	Dry	Dry
Root Zone Moisture:	Moist	Moist
Leaf Surf. Moisture:	N/A	Dry
% Cloud Cover:	70	10

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code:	ZEAMX	ZEAMX
Growth Stage:		V2-3
Height, Unit:		5 in
Crop Health:		Good

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	IPOSS	IPOSS
Growth Stage:		cot-2 leaf
Height, Unit:		1.5 in
Density,Unit:		5-8 m2
Weed 2 Code:	AMAPA	AMAPA
Growth Stage:		2-7 leaf
Height, Unit:		2 in
Density,Unit:		0-100 m2
Weed 3 Code:	GGGAN	GGGAN
Growth Stage:		2-4 leaf
Height, Unit:		3 in
Density,Unit:		0-100 m2
Weed 4 Code:	AMBEL	AMBEL
Growth Stage:		4-6 leaf
Height, Unit:		2 in
Density,Unit:		0-5 m2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	20 in	22 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air

Trial Comments

6/3/11 - Injury is flecking and leaf burn.
 Morningglory is only weed present. All other weeds controlled.

Early Postemergence Cadet in Field Corn							ZEAMX	IPOSS	AMAPA	IPOSS	
Trial ID: CRN14-11 Cooperator: FMC							Field	Morngrly	Palmer	Morngrly	
Location: Field #14 Investigator: Mark VanGessel							Corn	Species	Amaranth	Species	
Weed Code							Leafburn	Control	Control	Control	
Crop Code							%	%	%	%	
Weed or Crop Name							06/03/11	06/03/11	06/19/11	06/19/11	
Weed or Crop Name											
Rating Data Type											
Rating Unit											
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Code				
1	Untreated Check							0.0 c	0.0 e	0.0 d	0.0 b
2	Dual II Magnum..s-metolachlor	7.64 E		0.477 lb ai/A	7EPP	A		0.0 c	85.0 d	85.3 b	53.3 a
	Roundup PowerMax..glyphosate	4.5 AS		1.12 lb ae/A	1-3"wds	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	1-3"wds	B					
3	Dual II Magnum..s-metolachlor	7.64 E		0.477 lb ai/A	7EPP	A		7.0 b	91.0 c	76.7 c	60.0 a
	Cadet.....fluthiacet	0.91 EC		.00427 lb ai/A	1-3"wds	B					
	Roundup PowerMax..glyphosate	4.5 AS		1.12 lb ae/A	1-3"wds	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	1-3"wds	B					
4	Bicep Lite II Magnum Premix	6 L		2.25 lb ai/A	7EPP	A		8.0 b	97.7 ab	100.0 a	63.3 a
	Cadet.....fluthiacet	0.91 EC		.00427 lb ai/A	1-3"wds	B					
	Roundup PowerMax..glyphosate	4.5 AS		1.12 lb ae/A	1-3"wds	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	1-3"wds	B					
5	Dual II Magnum..s-metolachlor	7.64 E		0.477 lb ai/A	7EPP	A		7.3 b	91.7 c	88.7 b	53.3 a
	Cadet.....fluthiacet	0.91 EC		.00427 lb ai/A	1-3"wds	B					
	Atrazine 4L	4 L		1 lb ai/A	1-3"wds	B					
	Roundup PowerMax..glyphosate	4.5 AS		1.12 lb ae/A	1-3"wds	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	1-3"wds	B					
6	Dual II Magnum..s-metolachlor	7.64 E		0.477 lb ai/A	7EPP	A		7.0 b	93.3 bc	100.0 a	56.7 a
	Cadet.....fluthiacet	0.91 EC		.00427 lb ai/A	1-3"wds	B					
	Hornet WDG Premix	78.5 WG		0.147 lb ai/A	1-3"wds	B					
	Roundup PowerMax..glyphosate	4.5 AS		1.12 lb ae/A	1-3"wds	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	1-3"wds	B					
7	Dual II Magnum..s-metolachlor	7.64 E		0.477 lb ai/A	7EPP	A		8.0 b	99.0 a	98.3 a	55.0 a
	Cadet.....fluthiacet	0.91 EC		.00427 lb ai/A	1-3"wds	B					
	Impact.....topramezone	2.8 SC		0.0109 lb ai/A	1-3"wds	B					
	Atrazine 4L	4 L		0.5 lb ai/A	1-3"wds	B					
	Roundup PowerMax..glyphosate	4.5 AS		1.12 lb ae/A	1-3"wds	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v	1-3"wds	B					
8	Bicep Lite II Magnum Premix	6 L		2.25 lb ai/A	7EPP	A		14.0 a	94.0 bc	96.7 a	50.0 a
	Cadet.....fluthiacet	0.91 EC		.00427 lb ai/A	1-3"wds	B					
	Crop Oil Concentrate	100 L		1 % v/v	1-3"wds	B					
LSD (P=.05)							1.95	4.95	7.00	18.37	
Standard Deviation							1.11	2.83	4.00	10.49	
CV							17.34	3.47	4.95	21.42	
Replicate F							0.538	2.507	0.050	1.714	
Replicate Prob(F)							0.5953	0.1173	0.9518	0.2158	
Treatment F							50.673	413.450	212.502	11.149	
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Control in No-Tillage Field Corn Without Atrazine

Trial ID: CRN15-11 Cooperator:
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Morningglory Species	IPOSS	Ipomoea sp.
2.	Palmer Amaranth	AMAPA	Amaranthus palmeri S.Wats.

Crop 1: Field Corn **ZEAMX** **Variety:** H5753VTS
Planting Date: 05/10/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Firm/Trashy
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/17/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Soybean Stubble

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.

SOIL DESCRIPTION

% Sand: 79 **% OM:** 1.5 **Texture:** loamy sand
% Silt: 14 **pH:** 6.0
% Clay: 7 **CEC:** 5.2 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	05/05/11	06/01/11
Time of Day:	9:15 am	10:00 am
Application Method:	Spray	Spray
Application Timing:	7DPP	V-5
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	54 F	82 F
% Relative Humidity:	54	65
Wind Velocity, Unit:	5 mph	4 mph
Wind Direction:	West	Southwest
Dew Presence (Y/N):	Y	N
Soil Temp., Unit:	52 F	80 F
Soil Surf. Moisture:	Moist	Dry
Root Zone Moisture:	Wet	Moist
Leaf Surf. Moisture:	Wet	Dry
% Cloud Cover:	0	20

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code:	ZEAMX	ZEAMX
Growth Stage:		V5
Height, Unit:		13 in
Crop Health:		Good

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	IPOSS	IPOSS
Growth Stage:		cot-2 leaf
Height, Unit:		1.5 in
Density,Unit:		0-4 m2
Weed 2 Code:	AMAPA	AMAPA
Growth Stage:		vegetative
Height, Unit:		4 in
Density,Unit:		0-50 m2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	20 in	28 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air

Trial Comments

6/3/11 - Injury from PRE herbicides was stunted corn and averaged across treatments with same PRE treatments. POST injury is based on symptoms for the herbicides applied, did not include stunting from PRE treatments.

Most pigweed found in the corn row, although a few were emerging between the rows.

9/12/11: Scale for morningglory: 0= none over 12"; 1= few present at front or back edges of plots; 2= few present in the plots; 4= poor control

Weed Control in No-Tillage Field Corn Without Atrazine												
Trial ID: CRN15-11 Cooperator:												
Location: Field #14 Investigator: Mark VanGessel												
Weed Code	Crop Code	Weed or Crop Name	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date	ZEAMX Field Corn PRE Inj %	ZEAMX Field Corn POST Inj %	AMAPA Palmer Amaranth Control %	DIGSA Large Crabgras Control %	AMAPA Palmer Amaranth Control %	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code	06/03/11	06/03/11	06/03/11	06/03/11	06/19/11
1	Untreated Check							0.0d	0.0c	0.0f	0.0c	0.0d
	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A		7 DPP	A					
2	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A		7 DPP	A	0.0d	0.0c	78.3d	96.7 ab	95.7 bc
	SureStart Premix	4.25	SE	0.93 lb ai/A		7 DPP	A					
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A		V-5	B					
3	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A		7 DPP	A	7.0c	0.0c	94.0 bc	88.3 b	94.0 c
	Verdict Premix	5.57	EC	0.566 lb ai/A		7 DPP	A					
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A		V-5	B					
4	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A		7 DPP	A	0.0d	0.0c	97.3 ab	98.3 ab	95.7 bc
	Camix Premix	3.67	SC	1.84 lb ai/A		7 DPP	A					
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A		V-5	B					
5	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A		7 DPP	A	15.7 a	0.0c	100.0 a	100.0 a	100.0 a
	Fierce Premix	76	WG	0.178 lb ai/A		7 DPP	A					
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A		V-5	B					
6	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A		7 DPP	A	0.0d	0.0c	70.0 e	96.7 ab	99.7 a
	SureStart Premix	4.25	SE	0.8 lb ai/A		7 DPP	A					
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A		V-5	B					
	Callisto.....mesotrione	4	SC	0.094 lb ai/A		V-5	B					
7	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A		7 DPP	A	0.0d	11.3 a	71.7 e	93.3 ab	100.0 a
	SureStart Premix	4.25	SE	0.8 lb ai/A		7 DPP	A					
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A		V-5	B					
	Realm Q Premix	38.7	WG	0.097 lb ai/A		V-5	B					
8	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A		7 DPP	A	0.0d	0.0c	71.7 e	91.7 ab	99.0 ab
	SureStart Premix	4.25	SE	0.8 lb ai/A		7 DPP	A					
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A		V-5	B					
	Status Premix	56	WG	0.175 lb ai/A		V-5	B					
9	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A		7 DPP	A	9.7 b	0.0c	79.3 d	96.7 ab	100.0 a
	Basis Premix	75	DF	0.0234 lb ai/A		7 DPP	A					
	Halex GT Premix	4.38	SC	1.97 lb ai/A		V-5	B					

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						ZEAMX	ZEAMX	AMAPA	DIGSA	AMAPA	
Crop Code						Field	Field	Palmer	Large	Palmer	
Weed or Crop Name						Corn	Corn	Amaranth	Crabgras	Amaranth	
Weed or Crop Name						PRE Inj	POST Inj	Control	Control	Control	
Rating Data Type						%	%	%	%	%	
Rating Unit						06/03/11	06/03/11	06/03/11	06/03/11	06/19/11	
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
10	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A	7 DPP	A	9.7 b	0.0 c	79.3 d	100.0 a	99.0 ab
	Basis Premix	75	DF	0.0234 lb ai/A	7 DPP	A					
	Impact.....topramezone	2.8	SC	0.0164 lb ai/A	V-5	B					
	Crop Oil Concentrate	100	L	1% v/v	V-5	B					
	30% Urea Ammonium Nitrate	100	L	2% v/v	V-5	B					
11	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A	7 DPP	A	0.0 d	7.0 b	90.0 c	100.0 a	100.0 a
	Camix Premix	3.67	SC	1.83 lb ai/A	7 DPP	A					
	Steadfast Q Premix	75	WG	0.035 lb ai/A	V-5	B					
	_isoxadifen-ethyl	50	WG	0.0156 lb ai/A	V-5	B					
	Status Premix	56	WG	0.175 lb ai/A	V-5	B					
	Crop Oil Concentrate	100	L	1% v/v	V-5	B					
	30% Urea Ammonium Nitrate	100	L	1.25% v/v	V-5	B					
12	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A	7 DPP	A	0.0 d	1.7 c	100.0 a	100.0 a	100.0 a
	Lumax Premix	3.95	SC	2.47 lb ai/A	7 DPP	A					
	Atrazine 4L	4	L	0.75 lb ai/A	V-5	B					
	Crop Oil Concentrate	100	L	1% v/v	V-5	B					
LSD (P=.05)						1.82	2.41	5.29	11.02	3.99	
Standard Deviation						1.07	1.42	3.12	6.51	2.35	
CV						30.66	85.49	4.02	7.36	2.61	
Replicate F						1.158	1.149	0.285	2.180	2.001	
Replicate Prob(F)						0.3326	0.3352	0.7548	0.1368	0.1590	
Treatment F						79.184	19.731	223.054	55.957	440.023	
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							IPOSS	IPOSS	ZEAMX Field Corn Yield Bu/A 09/21/11
Crop Code							Morngrly Species Control % 06/19/11	Morngrly Species Comments Scale 09/12/11	
Weed or Crop Name									
Weed or Crop Name									
Rating Data Type									
Rating Unit									
Rating Date									
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg			Code
1	Untreated Check							0.0 e	191.9 a
	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A	7 DPP	A			
2	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A	7 DPP	A		82.0 bc	207.0 a
	SureStart Premix	4.25	SE	0.93 lb ai/A	7 DPP	A			
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A	V-5	B			
3	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A	7 DPP	A		86.0 b	202.2 a
	Verdict Premix	5.57	EC	0.566 lb ai/A	7 DPP	A			
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A	V-5	B			
4	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A	7 DPP	A		75.0 cd	208.5 a
	Camix Premix	3.67	SC	1.84 lb ai/A	7 DPP	A			
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A	V-5	B			
5	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A	7 DPP	A		84.7 bc	201.4 a
	Fierce Premix	76	WG	0.178 lb ai/A	7 DPP	A			
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A	V-5	B			
6	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A	7 DPP	A		89.7 ab	202.1 a
	SureStart Premix	4.25	SE	0.8 lb ai/A	7 DPP	A			
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A	V-5	B			
	Callisto.....mesotrione	4	SC	0.094 lb ai/A	V-5	B			
7	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A	7 DPP	A		96.3 a	204.5 a
	SureStart Premix	4.25	SE	0.8 lb ai/A	7 DPP	A			
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A	V-5	B			
	Realm Q Premix	38.7	WG	0.097 lb ai/A	V-5	B			
8	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A	7 DPP	A		88.0 ab	219.6 a
	SureStart Premix	4.25	SE	0.8 lb ai/A	7 DPP	A			
	Roundup Orig. Max...glyphosate	4.5	AS	0.77 lb ae/A	V-5	B			
	Status Premix	56	WG	0.175 lb ai/A	V-5	B			
9	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A	7 DPP	A		91.0 ab	217.0 a
	Basis Premix	75	DF	0.0234 lb ai/A	7 DPP	A			
	Halex GT Premix	4.38	SC	1.97 lb ai/A	V-5	B			

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							IPOSS	IPOSS	ZEAMX	
Crop Code							Morningly	Morningly	Field	
Weed or Crop Name							Species	Species	Corn	
Weed or Crop Name							Control	Comments	Yield	
Rating Data Type							%	Scale	Bu/A	
Rating Unit							06/19/11	09/12/11	09/21/11	
Rating Date										
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code			
10	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A		7 DPP	A	70.3 d	2.7 ab	206.2 a
	Basis Premix	75	DF	0.0234 lb ai/A		7 DPP	A			
	Impact.....topramezone	2.8	SC	0.0164 lb ai/A		V-5	B			
	Crop Oil Concentrate	100	L	1% v/v		V-5	B			
	30% Urea Ammonium Nitrate	100	L	2% v/v		V-5	B			
11	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A		7 DPP	A	90.7 ab	0.3 c	206.1 a
	Camix Premix	3.67	SC	1.83 lb ai/A		7 DPP	A			
	Steadfast Q Premix	75	WG	0.035 lb ai/A		V-5	B			
	_isoxadifen-ethyl	50	WG	0.0156 lb ai/A		V-5	B			
	Status Premix	56	WG	0.175 lb ai/A		V-5	B			
	Crop Oil Concentrate	100	L	1% v/v		V-5	B			
	30% Urea Ammonium Nitrate	100	L	1.25% v/v		V-5	B			
12	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A		7 DPP	A	81.7 bc	1.3 bc	197.7 a
	Lumax Premix	3.95	SC	2.47 lb ai/A		7 DPP	A			
	Atrazine 4L	4	L	0.75 lb ai/A		V-5	B			
	Crop Oil Concentrate	100	L	1% v/v		V-5	B			
LSD (P=.05)							9.75	1.71	17.82	
Standard Deviation							5.76	1.00	10.52	
CV							7.39	69.06	5.12	
Replicate F							3.319	6.847	6.531	
Replicate Prob(F)							0.0550	0.0054	0.0059	
Treatment F							59.125	4.180	1.548	
Treatment Prob(F)							0.0001	0.0032	0.1844	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Control in Field Corn
 Maximizing Benefit of Residual Herbicide Timing
 Trial ID: CRN16-11 Cooperator:
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Morningglory Species	IPOSS	Ipomoea sp.
2.	Palmer Amaranth	AMAPA	Amaranthus palmeri S.Wats.

Crop 1: Field Corn **ZEAMX** **Variety:** H5753VTS
Planting Date: 05/19/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Firm/Trashy
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/25/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** FACTORIAL
Tillage Type: No Tillage/Soybean Stubble

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	05/06/11	Roundup WeatherMax	4.5	AS	22	fl oz/A
2.	05/19/11	Gramoxone Inteon	2	SL	1	qt/A
3.	05/19/11	Dual II Magnum	7.64	E	1.5	pt/A
4.	05/19/11	Nonionic Surfactant			0.25	% v/v

SOIL DESCRIPTION

% Sand: 79 **% OM:** 1.5 **Texture:** loamy sand
% Silt: 14 **pH:** 6.0
% Clay: 7 **CEC:** 5.2 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	04/29/11	05/19/11	06/01/11	06/09/11
Time of Day:	11:15 am	1:00 pm	10:15 am	8:15 am
Application Method:	Spray	Spray	Spray	Spray
Application Timing:	21DPP	PRE	V2-3	V5
Applic. Placement:	Brdcst	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	67 F	72 F	82 F	82 F
% Relative Humidity:	42	61	65	75
Wind Velocity, Unit:	3 mph	3 mph	4 mph	1 mph
Wind Direction:	West	Southwest	Southwest	Southwest
Dew Presence (Y/N):	N	N	N	N
Soil Temp., Unit:	62 F	72 F	80 F	80 F
Soil Surf. Moisture:	Moist	Moist	Dry	Moist
Root Zone Moisture:	Moist	Moist	Moist	Moist
Leaf Surf. Moisture:	Dry	Dry	Dry	Dry
% Cloud Cover:	5	90	20	0

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code:	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Growth Stage:			V3	V5
Height, Unit:			6 in	14 in
Crop Health:			Good	Good

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code:	IPOSS	IPOSS	IPOSS	IPOSS
Growth Stage:			cot-2 leaf	vegetative
Height, Unit:			1.5 in	4 in
Density, Unit:			5-40 m2	20-30 m2
Weed 2 Code:	AMAPA	AMAPA	AMAPA	AMAPA
Growth Stage:				vegetative
Height, Unit:				6 in
Density, Unit:				0-30 m2

APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	Tractor	Tractor	Tractor	Tractor
Operating Pressure:	40 psi	40 psi	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002	11002
Nozzle Spacing, Unit:	20 in	20 in	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	20 in	20 in	23 in	26 in
Ground Speed, Unit:	3 mph	3 mph	3 mph	3 mph
Carrier:	water	water	water	water
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air	Comp. Air	Comp. Air

Trt No	Treatment Application Comment
10	Plot 110 got sprayed with Trt.12 at PRE timing (sprayer box error).

Weed Control in Field Corn Maximizing Benefit of Residual Herbicide Timing Trial ID: CRN16-11 Cooperator: Location: Field #14 Investigator: Mark VanGessel											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code	ZEAMX Field Corn Chloross % 06/03/11	AMAPA Palmer Amaranth Control % 06/21/11	IPOSS Morngly Species Control % 06/21/11	IPOSS Morngly Species Control % 08/17/11	ZEAMX Field Corn Yield Bu/A 09/21/11
1	Atrazine 4L 21 Days Early Pre-Plant	4 L		1.5 lb ai/A	21DPP	A	0.0 c	60.0 c	51.0 def	10.0 ef	127.0 b
2	Atrazine 4L PRE - EPP rate	4 L		1.5 lb ai/A	PRE	B	0.0 c	100.0 a	60.0 cde	18.3 ef	190.4 a
3	Atrazine 4L PRE - POST rate	4 L		0.75 lb ai/A	PRE	B	0.0 c	100.0 a	41.7 ef	23.3 de	180.8 a
4	Atrazine 4L EPOST (V2-3 collar corn) Roundup WeatherMax..glyphosate	4 L 4.5 AS		0.75 lb ai/A 1.12 lb ai/A	V2-3 V2-3	C C	0.0 c	100.0 a	79.7 abc	60.0 bc	194.6 a
5	Atrazine 4L POST (V5 collar corn) Roundup WeatherMax..glyphosate	4 L 4.5 AS		0.75 lb ai/A 1.12 lb ai/A	V5 V5	D D		100.0 a	95.7 a	86.7 a	206.7 a
6	Callisto.....mesotrione 21 Days Early Pre-Plant	4 SC		0.169 lb ai/A	21DPP	A	0.0 c	75.0 bc	36.7 f	0.0 f	169.8 a
7	Callisto.....mesotrione PRE - EPP rate	4 SC		0.169 lb ai/A	PRE	B	0.0 c	100.0 a	70.0 bcd	43.3 cd	187.2 a
8	Callisto.....mesotrione PRE - POST rate	4 SC		0.094 lb ai/A	PRE	B	0.0 c	92.7 a	56.7 c-f	30.0 de	185.0 a
9	Callisto.....mesotrione EPOST (V2-3 collar corn) Roundup WeatherMax..glyphosate	4 SC 4.5 AS		0.094 lb ai/A 1.12 lb ai/A	V2-3 V2-3	C C	0.0 c	100.0 a	88.0 ab	71.7 ab	205.0 a
10	Callisto.....mesotrione POST (V5 collar corn) Roundup WeatherMax..glyphosate	4 SC 4.5 AS		0.094 lb ai/A 1.12 lb ai/A	V5 V5	D D		100.0 a	94.3 a	74.3 ab	204.2 a
11	Resolve SG.....rimsulfuron 21 Days Early Pre-Plant	25 SG		0.0234 lb ai/A	21DPP	A	10.3 a	89.3 ab	58.3 c-f	0.0 f	181.3 a
12	Resolve SG.....rimsulfuron PRE - EPP rate	25 SG		0.0234 lb ai/A	PRE	B	11.7 a	100.0 a	60.0 cde	0.0 f	178.3 a
13	Resolve SG.....rimsulfuron PRE - POST rate	25 SG		0.0156 lb ai/A	PRE	B	6.3 b	100.0 a	56.7 c-f	23.3 de	188.8 a

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						ZEAMX	AMAPA	IPOSS	IPOSS	ZEAMX	
Crop Code						Field	Palmer	Morningly	Morningly	Field	
Weed or Crop Name						Corn	Amaranth	Species	Species	Corn	
Weed or Crop Name						Chloross	Control	Control	Control	Yield	
Rating Data Type						%	%	%	%	Bu/A	
Rating Unit											
Rating Date						06/03/11	06/21/11	06/21/11	08/17/11	09/21/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code					
14	Resolve SG.....rimsulfuron EPOST (V2-3 collar corn) Roundup WeatherMax..glyphosate	25	SG	0.0156 lb ai/A	V2-3	C	9.7 a	100.0 a	86.7 ab	63.3 bc	193.3 a
15	Resolve SG.....rimsulfuron POST (V5 collar corn) Roundup WeatherMax..glyphosate	25	SG	0.0156 lb ai/A	V5	D		100.0 a	88.3 ab	61.7 bc	198.5 a
16	Untreated Check Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ai/A	21 DPP	A	0.0 c	0.0 d	0.0 g	0.0 f	112.8 b
LSD (P=.05)							2.23	17.08	23.02	20.51	41.47
Standard Deviation							1.32	10.25	13.81	12.30	24.87
CV							45.28	11.57	21.58	34.78	13.71
Replicate F							1.888	0.454	0.051	1.108	3.431
Replicate Prob(F)							0.1732	0.6393	0.9507	0.3434	0.0455
Treatment F							37.863	19.618	10.038	18.324	3.333
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0024

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							ZEAMX	AMAPA	IPOSS	IPOSS	ZEAMX
Crop Code							Field	Palmer	Morngrly	Morngrly	Field
Weed or Crop Name							Corn	Amaranth	Species	Species	Corn
Weed or Crop Name							Chloross	Control	Control	Control	Yield
Rating Data Type							%	%	%	%	Bu/A
Rating Unit							06/03/11	06/21/11	06/21/11	08/17/11	09/21/11
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Atrazine 4L 3PRE - POST rate	4 L		0.75 lb ai/A	PRE	B	0.0	100.0	41.7	23.3	180.8
2	Callisto.....mesotrione 3PRE - POST rate	4 SC		0.094 lb ai/A	PRE	B	0.0	92.7	56.7	30.0	185.0
3	Resolve SG.....rimsulfuron 3PRE - POST rate	25 SG		0.0156 lb ai/A	PRE	B	6.3	100.0	56.7	23.3	188.8
1	Atrazine 4L 4 EPOST (V2-3 collar corn)	4 L		0.75 lb ai/A	V2-3	C	0.0	100.0	79.7	60.0	194.6
4	Roundup WeatherMax..glyphosate	4.5 AS		1.12 lb ai/A	V2-3	C					
2	Callisto.....mesotrione 4 EPOST (V2-3 collar corn)	4 SC		0.094 lb ai/A	V2-3	C	0.0	100.0	88.0	71.7	205.0
4	Roundup WeatherMax..glyphosate	4.5 AS		1.12 lb ai/A	V2-3	C					
3	Resolve SG.....rimsulfuron 4 EPOST (V2-3 collar corn)	25 SG		0.0156 lb ai/A	V2-3	C	9.7	100.0	86.7	63.3	193.3
4	Roundup WeatherMax..glyphosate	4.5 AS		1.12 lb ai/A	V2-3	C					
1	Atrazine 4L 5 POST (V5 collar corn)	4 L		0.75 lb ai/A	V5	D	.	100.0	95.7	86.7	206.7
5	Roundup WeatherMax..glyphosate	4.5 AS		1.12 lb ai/A	V5	D					
2	Callisto.....mesotrione 5 POST (V5 collar corn)	4 SC		0.094 lb ai/A	V5	D	.	100.0	94.3	74.3	204.2
5	Roundup WeatherMax..glyphosate	4.5 AS		1.12 lb ai/A	V5	D					
3	Resolve SG.....rimsulfuron 5 POST (V5 collar corn)	25 SG		0.0156 lb ai/A	V5	D	.	100.0	88.3	61.7	198.5
5	Roundup WeatherMax..glyphosate	4.5 AS		1.12 lb ai/A	V5	D					

Weed Control in Field Corn
 Maximizing Benefit of Residual Herbicide Timing
 Trial ID: CRN16-11 Cooperator:
 Location: Field #14 Investigator: Mark VanGessel
 FACTORIAL/POOLED ERROR AOV For ZEAMX Field Corn Chloross % 06/03/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	44	889.200000				
R	2	5.733333	2.866667	1.870	0.1729	0.9
A	2	577.600000	288.800000	188.348	0.0001	0.9
B	4	87.644444	21.911111	14.290	0.0001	1.2
AB	8	175.288889	21.911111	14.290	0.0001	2.1
ERROR	28	42.933333	1.533333			

FACTORIAL/POOLED ERROR AOV For AMAPA Palmer Amaranth Control % 06/21/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	44	9045.200000				
R	2	101.733333	50.866667	0.453	0.6403	7.9
A	2	277.733333	138.866667	1.237	0.3057	7.9
B	4	4401.422222	1100.355556	9.801	0.0001	10.2
AB	8	1120.711111	140.088889	1.248	0.3093	17.7
ERROR	28	3143.600000	112.271429			

FACTORIAL/POOLED ERROR AOV For IPOSS Mornnglry Species Control % 06/21/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	44	21346.311111				
R	2	20.577778	10.288889	0.050	0.9510	10.7
A	2	162.977778	81.488889	0.399	0.6747	10.7
B	4	14017.200000	3504.300000	17.160	0.0001	13.8
AB	8	1427.466667	178.433333	0.874	0.5498	23.9
ERROR	28	5718.088889	204.217460			

FACTORIAL/POOLED ERROR AOV For IPOSS Mornnglry Species Control % 08/17/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	44	42472.800000				
R	2	357.733333	178.866667	1.108	0.3441	9.5
A	2	1596.400000	798.200000	4.946	0.0145	9.5
B	4	33314.800000	8328.700000	51.614	0.0001	12.3
AB	8	2685.600000	335.700000	2.080	0.0726	21.2
ERROR	28	4518.266667	161.366667			

FACTORIAL/POOLED ERROR AOV For ZEAMX Field Corn Yield Bu/A 09/21/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	44	37174.333909				
R	2	3521.468567	1760.734284	2.771	0.0798	18.9
A	2	890.297027	445.148514	0.700	0.5048	18.9
B	4	10264.138138	2566.034534	4.038	0.0104	24.3
AB	8	4704.918353	588.114794	0.925	0.5109	42.2
ERROR	28	17793.511823	635.482565			

Weed Control with Realm Q in Field Corn

Trial ID: CRN17-11 Cooperator: DuPont
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947
Investigator: Mark VanGessel

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Palmer Amaranth	AMAPA	Amaranthus palmeri S.Wats.
2.	Crabgrass Species	DIGSS	Digitaria sp.
3.	Morningglory Species	IPOSS	Ipomoea sp.

Crop 1: Field Corn **ZEAMX** **Variety:** H5753VTS
Planting Date: 05/12/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Smooth
Soil Temperature: 80 F **Soil Moisture:** Moist **Emergence Date:** 05/19/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Conventional Tillage

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.

SOIL DESCRIPTION

% Sand: 75 **% OM:** 1.2 **Texture:** sandy loam
% Silt: 18 **pH:** 5.9
% Clay: 8 **CEC:** 4.9 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	05/12/11	06/03/11	06/09/11	06/16/11
Time of Day:	2:30 pm	9:00 am	8:30 am	11:00 am
Application Method:	Spray	Spray	Spray	Spray
Application Timing:	PRE	21DAP	28DAP	35DAP
Applic. Placement:	Brdcst	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	72 F	65 F	82 F	76 F
% Relative Humidity:	46	42	75	44
Wind Velocity, Unit:	1 mph	4 mph	1 mph	2 mph
Wind Direction:	South	North	Southwest	Southwest
Dew Presence (Y/N):	N	Y	N	N
Soil Temp., Unit:	71 F	62 F	80 F	75 F
Soil Surf. Moisture:	Dry	Moist	Moist	Dry
Root Zone Moisture:	Moist	Moist	Moist	Moist
Leaf Surf. Moisture:	N/A	Moist	Dry	Dry
% Cloud Cover:	35	0	0	70

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code:	ZEAMX	ZEAMX	ZEAMX	ZEAMX
Growth Stage:		V4	V6	V10
Height, Unit:		11 in	18 in	37 in
Crop Health:		Good	Good	Good

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code:	AMAPA	AMAPA	AMAPA	AMAPA
Growth Stage:		vegetative	vegetative	vegetative
Height, Unit:		5 in	6 in	6 in
Density, Unit:		200 m ²	2-12 m ²	0-200 m ²
Weed 2 Code:	DIGSS	DIGSS	DIGSS	DIGSS
Growth Stage:		3-4 tiller		vegetative
Height, Unit:		4 in		6 in
Density, Unit:		50-80 m ²		0-200 m ²
Weed 3 Code:	IPOSS	IPOSS	IPOSS	IPOSS
Growth Stage:			vegetative	
Height, Unit:			4.5 in	
Density, Unit:			5-10 m ²	

APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	Tractor	Tractor	Tractor	Tractor
Operating Pressure:	40 psi	40 psi	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002	11002
Nozzle Spacing, Unit:	20 in	20 in	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	20 in	25 in	32 in	50 in
Ground Speed, Unit:	3 mph	3 mph	3 mph	3 mph
Carrier:	water	water	water	water
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air	Comp. Air	Comp. Air

Trial Comments

At 21DAP application timing the untreated check plots were moisture-stressed from weed competition.

Weed Control with Realm Q in Field Corn												
Trial ID: CRN17-11 Cooperator: DuPont												
Location: Field #14 Investigator: Mark VanGessel												
Weed Code							ZEAMX	AMAPA	IPOSS	DIGSA	AMAPA	IPOSS
Crop Code							Field	Palmer	Morngrly	Large	Palmer	Morngrly
Weed or Crop Name							Corn	Amaranth	Species	Crabgras	Amaranth	Species
Weed or Crop Name							Injury	Control	Control	Control	Control	Control
Rating Data Type							%	%	%	%	%	%
Rating Unit							06/04/11	06/04/11	06/04/11	06/04/11	06/17/11	06/17/11
Rating Date												
Trt	Treatment	Form	Form	Rate	Grow	Appl						
No.	Name	Conc	Type	Rate	Stg	Code						
1	Untreated Check						0.0 a	0.0 c	0.0 c	0.0 c	0.3 c	0.0 e
2	Realm Q Premix	38.7	WG	0.097 lb ai/A	21	DAP					76.7 b	81.0 bcd
	_Resolve.....rimsulfuron	25	SG	0.0187 lb ai/A	21	DAP B						
	_Callisto.....mesotrione	50	WG	0.078 lb ai/A	21	DAP B						
	_isoxadifen-ethyl	50	WG	0.0094 lb ai/A	21	DAP B						
	Crop Oil Concentrate	100	L	1 % v/v	21	DAP B						
	Dry Ammonium Sulfate	100	D	1.2 % w/v	21	DAP B						
	Abundit.....glyphosate	3	SC	0.75 lb ae/A	35	DAP D						
	Dry Ammonium Sulfate	100	D	1.2 % w/v	35	DAP D						
3	Realm Q Premix	38.7	WG	0.097 lb ai/A	21	DAP					91.7 a	79.3 cd
	_Resolve.....rimsulfuron	25	SG	0.0187 lb ai/A	21	DAP B						
	_Callisto.....mesotrione	50	WG	0.078 lb ai/A	21	DAP B						
	_isoxadifen-ethyl	50	WG	0.0094 lb ai/A	21	DAP B						
	Abundit.....glyphosate	3	SC	0.75 lb ae/A	21	DAP B						
	Dry Ammonium Sulfate	100	D	1.2 % w/v	21	DAP B						
4	Realm Q Premix	38.7	WG	0.097 lb ai/A	21	DAP					100.0 a	90.7 ab
	_Resolve.....rimsulfuron	25	SG	0.0187 lb ai/A	21	DAP B						
	_Callisto.....mesotrione	50	WG	0.078 lb ai/A	21	DAP B						
	_isoxadifen-ethyl	50	WG	0.0094 lb ai/A	21	DAP B						
	Abundit.....glyphosate	3	SC	0.75 lb ae/A	21	DAP B						
	Atrazine 4L	4	L	1 lb ai/A	21	DAP B						
	Dry Ammonium Sulfate	100	D	1.2 % w/v	21	DAP B						
5	Realm Q Premix	38.7	WG	0.097 lb ai/A	21	DAP					95.0 a	88.3 abc
	_Resolve.....rimsulfuron	25	SG	0.0187 lb ai/A	21	DAP B						
	_Callisto.....mesotrione	50	WG	0.078 lb ai/A	21	DAP B						
	_isoxadifen-ethyl	50	WG	0.0094 lb ai/A	21	DAP B						
	Atrazine 4L	4	L	1 lb ai/A	21	DAP B						
	Crop Oil Concentrate	100	L	1 % v/v	21	DAP B						
	Dry Ammonium Sulfate	100	D	1.2 % w/v	21	DAP B						
	Abundit.....glyphosate	3	SC	0.75 lb ae/A	35	DAP D						
	Dry Ammonium Sulfate	100	D	1.2 % w/v	35	DAP D						

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							ZEAMX	AMAPA	IPOSS	DIGSA	AMAPA	IPOSS
Crop Code							Field	Palmer	Morngrly	Large	Palmer	Morngrly
Weed or Crop Name							Corn	Amaranth	Species	Crabgras	Amaranth	Species
Weed or Crop Name							Injury	Control	Control	Control	Control	Control
Rating Data Type							%	%	%	%	%	%
Rating Unit												
Rating Date							06/04/11	06/04/11	06/04/11	06/04/11	06/17/11	06/17/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg Code						
6	Cinch ATZ Premix	5.5L		1.38 lb ai/A	PRE	A	0.0 a	86.7 b	53.3 b	89.3 b	92.7 a	89.0 abc
	Realm Q Premix	38.7 WG		0.097 lb ai/A	28DAP							
	_Resolve.....rimsulfuron	25 SG		0.0187 lb ai/A	28DAP	C						
	_Callisto.....mesotrione	50 WG		0.078 lb ai/A	28DAP	C						
	_isoxadifen-ethyl	50 WG		0.0094 lb ai/A	28DAP	C						
	Crop Oil Concentrate	100 L		1 % v/v	28DAP	C						
	Dry Ammonium Sulfate	100 D		1.2 % w/v	28DAP	C						
7	Cinch ATZ Premix	5.5L		1.38 lb ai/A	PRE	A	0.0 a	86.7 b	43.3 b	86.7 b	100.0 a	91.0 a
	Realm Q Premix	38.7 WG		0.097 lb ai/A	28DAP							
	_Resolve.....rimsulfuron	25 SG		0.0187 lb ai/A	28DAP	C						
	_Callisto.....mesotrione	50 WG		0.078 lb ai/A	28DAP	C						
	_isoxadifen-ethyl	50 WG		0.0094 lb ai/A	28DAP	C						
	Abundit.....glyphosate	3 SC		0.75 lb ae/A	28DAP	C						
	Dry Ammonium Sulfate	100 D		1.2 % w/v	28DAP	C						
8	Cinch ATZ Premix	5.5L		1.38 lb ai/A	21DAP	B					97.3 a	88.7 abc
	Realm Q Premix	38.7 WG		0.097 lb ai/A	21DAP							
	_Resolve.....rimsulfuron	25 SG		0.0187 lb ai/A	21DAP	B						
	_Callisto.....mesotrione	50 WG		0.078 lb ai/A	21DAP	B						
	_isoxadifen-ethyl	50 WG		0.0094 lb ai/A	21DAP	B						
	Abundit.....glyphosate	3 SC		0.75 lb ae/A	21DAP	B						
	Dry Ammonium Sulfate	100 D		1.2 % w/v	21DAP	B						
9	Halex GT Premix	4.38 SC		1.97 lb ai/A	21DAP	B					90.0 a	76.7 d
	Nonionic Surfactant	100 L		0.25 % v/v	21DAP	B						
10	Lumax Premix	3.95 SC		2.47 lb ai/A	PRE	A	0.0 a	100.0 a	79.3 a	100.0 a	100.0 a	76.0 d
	Atrazine 4L	4L		0.75 lb ai/A	PRE	A						
LSD (P=.05)							0.00	6.66	17.91	5.02	12.80	9.68
Standard Deviation							0.00	3.33	8.96	2.51	7.43	5.62
CV							0.0	4.88	20.37	3.64	8.81	7.39
Replicate F							0.000	3.000	1.581	2.498	3.080	1.211
Replicate Prob(F)							1.0000	0.1250	0.2809	0.1625	0.0722	0.3224
Treatment F							0.000	571.000	40.730	1022.520	50.107	71.080
Treatment Prob(F)							1.0000	0.0001	0.0002	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							DIGSA
Crop Code							
Weed or Crop Name							Large
Weed or Crop Name							Crabgras
Rating Data Type							Control
Rating Unit							%
Rating Date							06/17/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code
1	Untreated Check						0.0 c
2	Realm Q Premix	38.7	WG	0.097	lb ai/A	21DAP	63.3 b
	_Resolve.....rimsulfuron	25	SG	0.0187	lb ai/A	21DAP B	
	_Callisto.....mesotrione	50	WG	0.078	lb ai/A	21DAP B	
	_isoxadifen-ethyl	50	WG	0.0094	lb ai/A	21DAP B	
	Crop Oil Concentrate	100	L	1	% v/v	21DAP B	
	Dry Ammonium Sulfate	100	D	1.2	% w/v	21DAP B	
	Abundit.....glyphosate	3	SC	0.75	lb ae/A	35DAP D	
	Dry Ammonium Sulfate	100	D	1.2	% w/v	35DAP D	
3	Realm Q Premix	38.7	WG	0.097	lb ai/A	21DAP	93.0 a
	_Resolve.....rimsulfuron	25	SG	0.0187	lb ai/A	21DAP B	
	_Callisto.....mesotrione	50	WG	0.078	lb ai/A	21DAP B	
	_isoxadifen-ethyl	50	WG	0.0094	lb ai/A	21DAP B	
	Abundit.....glyphosate	3	SC	0.75	lb ae/A	21DAP B	
	Dry Ammonium Sulfate	100	D	1.2	% w/v	21DAP B	
4	Realm Q Premix	38.7	WG	0.097	lb ai/A	21DAP	96.3 a
	_Resolve.....rimsulfuron	25	SG	0.0187	lb ai/A	21DAP B	
	_Callisto.....mesotrione	50	WG	0.078	lb ai/A	21DAP B	
	_isoxadifen-ethyl	50	WG	0.0094	lb ai/A	21DAP B	
	Abundit.....glyphosate	3	SC	0.75	lb ae/A	21DAP B	
	Atrazine 4L	4	L	1	lb ai/A	21DAP B	
	Dry Ammonium Sulfate	100	D	1.2	% w/v	21DAP B	
5	Realm Q Premix	38.7	WG	0.097	lb ai/A	21DAP	72.7 b
	_Resolve.....rimsulfuron	25	SG	0.0187	lb ai/A	21DAP B	
	_Callisto.....mesotrione	50	WG	0.078	lb ai/A	21DAP B	
	_isoxadifen-ethyl	50	WG	0.0094	lb ai/A	21DAP B	
	Atrazine 4L	4	L	1	lb ai/A	21DAP B	
	Crop Oil Concentrate	100	L	1	% v/v	21DAP B	
	Dry Ammonium Sulfate	100	D	1.2	% w/v	21DAP B	
	Abundit.....glyphosate	3	SC	0.75	lb ae/A	35DAP D	
	Dry Ammonium Sulfate	100	D	1.2	% w/v	35DAP D	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							DIGSA
Crop Code							
Weed or Crop Name							Large
Weed or Crop Name							Crabgras
Rating Data Type							Control
Rating Unit							%
Rating Date							06/17/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code
6	Cinch ATZ Premix	5.5	L	1.38	lb ai/A	PRE	A
	Realm Q Premix	38.7	WG	0.097	lb ai/A	28DAP	
	_Resolve.....rimsulfuron	25	SG	0.0187	lb ai/A	28DAP	C
	_Callisto.....mesotrione	50	WG	0.078	lb ai/A	28DAP	C
	_isoxadifen-ethyl	50	WG	0.0094	lb ai/A	28DAP	C
	Crop Oil Concentrate	100	L	1	% v/v	28DAP	C
	Dry Ammonium Sulfate	100	D	1.2	% w/v	28DAP	C
7	Cinch ATZ Premix	5.5	L	1.38	lb ai/A	PRE	A
	Realm Q Premix	38.7	WG	0.097	lb ai/A	28DAP	
	_Resolve.....rimsulfuron	25	SG	0.0187	lb ai/A	28DAP	C
	_Callisto.....mesotrione	50	WG	0.078	lb ai/A	28DAP	C
	_isoxadifen-ethyl	50	WG	0.0094	lb ai/A	28DAP	C
	Abundit.....glyphosate	3	SC	0.75	lb ae/A	28DAP	C
	Dry Ammonium Sulfate	100	D	1.2	% w/v	28DAP	C
8	Cinch ATZ Premix	5.5	L	1.38	lb ai/A	21DAP	B
	Realm Q Premix	38.7	WG	0.097	lb ai/A	21DAP	
	_Resolve.....rimsulfuron	25	SG	0.0187	lb ai/A	21DAP	B
	_Callisto.....mesotrione	50	WG	0.078	lb ai/A	21DAP	B
	_isoxadifen-ethyl	50	WG	0.0094	lb ai/A	21DAP	B
	Abundit.....glyphosate	3	SC	0.75	lb ae/A	21DAP	B
	Dry Ammonium Sulfate	100	D	1.2	% w/v	21DAP	B
9	Halex GT Premix	4.38	SC	1.97	lb ai/A	21DAP	B
	Nonionic Surfactant	100	L	0.25	% v/v	21DAP	B
10	Lumax Premix	3.95	SC	2.47	lb ai/A	PRE	A
	Atrazine 4L	4	L	0.75	lb ai/A	PRE	A
LSD (P=.05)							10.89
Standard Deviation							6.32
CV							7.85
Replicate F							0.304
Replicate Prob(F)							0.7420
Treatment F							70.678
Treatment Prob(F)							0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Preemergence Mixtures of Rimsulfuron and Dry Mesotrione in Field Corn

Trial ID: CRN18-11 Cooperator: DuPont
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947
Investigator: Mark VanGessel

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Crabgrass Species	DIGSS	Digitaria sp.
2.	Morningglory Species	IPOSS	Ipomoea sp.

Crop 1: Field Corn **ZEAMX** **Variety:** H5753VTS
Planting Date: 05/12/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Smooth
Soil Temperature: 80 F **Soil Moisture:** Moist **Emergence Date:** 05/19/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Conventional Tillage

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.

SOIL DESCRIPTION

% Sand: 75 **% OM:** 1.2 **Texture:** sandy loam
% Silt: 18 **pH:** 5.9
% Clay: 8 **CEC:** 4.9 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	05/12/11	06/09/11
Time of Day:	3:30 pm	8:15 am
Application Method:	Spray	Spray
Application Timing:	PRE	28DAP
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	72 F	82 F
% Relative Humidity:	49	75
Wind Velocity, Unit:	1 mph	1 mph
Wind Direction:	Southeast	Southwest
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	72 F	80 F
Soil Surf. Moisture:	Dry	Moist
Root Zone Moisture:	Moist	Moist
Leaf Surf. Moisture:	N/A	Dry
% Cloud Cover:	35	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code:	ZEAMX	ZEAMX
Growth Stage:		V6
Height, Unit:		18 in
Crop Health:		Good

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	DIGSS	DIGSS
Growth Stage:		4-5 tiller
Height, Unit:		4 in
Density, Unit:		0-10 m ²
Weed 2 Code:	IPOSS	IPOSS
Growth Stage:		vegetative
Height, Unit:		2.5 in
Density, Unit:		0-5 m ²

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	20 in	32 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air

Preemergence Mixtures of Rimsulfuron and Dry Mesotrione in Field Corn											
Trial ID: CRN18-11		Cooperator: DuPont									
Location: Field #14		Investigator: Mark VanGessel									
Trt	Treatment	Form	Form	Rate	Grow	Appl	ZEAMX	AMAPA	IPOSS	DIGSA	AMAPA
No.	Name	Conc	Type	Unit	Stg	Code	Field Corn Injury %	Palmer Amaranth Control %	Morngrly Species Control %	Large Crabgrass Control %	Palmer Amaranth Control %
							06/03/11	06/03/11	06/03/11	06/03/11	06/21/11
1	Untreated Check						0.0 e	0.0 c	0.0 e	0.0 c	0.0 c
2	Resolve SG.....rimsulfuron	25	SG	0.0156 lb ai/A	PRE	A	11.7 abc	100.0 a	75.0 c	96.7 a	96.7 ab
	Callisto.....mesotrione	50	WG	0.14 lb ai/A	PRE	A					
3	Resolve SG.....rimsulfuron	25	SG	0.0234 lb ai/A	PRE	A	13.0 ab	98.3 a	75.0 c	95.0 a	83.3 b
	Callisto.....mesotrione	50	WG	0.14 lb ai/A	PRE	A					
4	Resolve SG.....rimsulfuron	25	SG	0.0156 lb ai/A	PRE	A	5.7 de	100.0 a	85.0 abc	97.3 a	83.3 b
	Harmony SG.....thifensulfuron	50	SG	0.0156 lb ai/A	PRE	A					
	Callisto.....mesotrione	50	WG	0.14 lb ai/A	PRE	A					
5	Resolve SG.....rimsulfuron	25	SG	0.0156 lb ai/A	PRE	A	5.7 de	100.0 a	80.3 bc	96.7 a	93.3 ab
	Callisto.....mesotrione	50	WG	0.14 lb ai/A	PRE	A					
	Atrazine 4L	4	L	1 lb ai/A	PRE	A					
6	Resolve SG.....rimsulfuron	25	SG	0.0234 lb ai/A	PRE	A	6.7 cd	98.3 a	86.7 ab	96.7 a	90.0 ab
	Callisto.....mesotrione	50	WG	0.14 lb ai/A	PRE	A					
	Atrazine 4L	4	L	1 lb ai/A	PRE	A					
7	Resolve SG.....rimsulfuron	25	SG	0.0156 lb ai/A	PRE	A	10.0 a-d	100.0 a	84.3 abc	100.0 a	97.3 ab
	Harmony SG.....thifensulfuron	50	SG	0.0156 lb ai/A	PRE	A					
	Callisto.....mesotrione	50	WG	0.14 lb ai/A	PRE	A					
	Atrazine 4L	4	L	1 lb ai/A	PRE	A					
8	Resolve SG.....rimsulfuron	25	SG	0.0156 lb ai/A	PRE	A	9.7 bcd	100.0 a	85.0 abc	96.0 a	100.0 a
	Callisto.....mesotrione	50	WG	0.14 lb ai/A	PRE	A					
	Atrazine 4L	4	L	1 lb ai/A	PRE	A					
	Abundit.....glyphosate	3	SC	0.75 lb ae/A	28DAP	B					
	Dry Ammonium Sulfate	100	D	1.2 % w/v	28DAP	B					
9	Resolve SG.....rimsulfuron	25	SG	0.0234 lb ai/A	PRE	A	12.3 abc	100.0 a	88.0 ab	100.0 a	100.0 a
	Callisto.....mesotrione	50	WG	0.14 lb ai/A	PRE	A					
	Atrazine 4L	4	L	1 lb ai/A	PRE	A					
	Abundit.....glyphosate	3	SC	0.75 lb ae/A	28DAP	B					
	Dry Ammonium Sulfate	100	D	1.2 % w/v	28DAP	B					
10	Resolve SG.....rimsulfuron	25	SG	0.0156 lb ai/A	PRE	A	10.0 a-d	100.0 a	87.7 ab	95.0 a	100.0 a
	Harmony SG.....thifensulfuron	50	SG	0.0156 lb ai/A	PRE	A					
	Callisto.....mesotrione	50	WG	0.14 lb ai/A	PRE	A					
	Atrazine 4L	4	L	1 lb ai/A	PRE	A					
	Abundit.....glyphosate	3	SC	0.75 lb ae/A	28DAP	B					
	Dry Ammonium Sulfate	100	D	1.2 % w/v	28DAP	B					

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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							ZEAMX	AMAPA	IPOSS	DIGSA	AMAPA
							Field	Palmer	Morningly	Large	Palmer
							Corn	Amaranth	Species	Crabgrass	Amaranth
							Injury	Control	Control	Control	Control
							%	%	%	%	%
							06/03/11	06/03/11	06/03/11	06/03/11	06/21/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
11	Resolve SG.....rimsulfuron	25	SG	0.0156	lb ai/A	PRE	A	10.0 a-d	100.0 a	92.0 a	100.0 a
	Callisto.....mesotrione	50	WG	0.14	lb ai/A	PRE	A				
	Cinch ATZ Premix	5.5	L	2.2	lb ai/A	PRE	A				
12	Lumax Premix	3.95	SC	2.96	lb ai/A	PRE	A	0.0 e	100.0 a	89.3 ab	100.0 a
13	Lumax Premix	3.95	SC	2.47	lb ai/A	PRE	A	0.0 e	100.0 a	84.3 abc	100.0 a
	Abundit.....glyphosate	3	SC	0.75	lb ae/A	28DAP	B				
	Dry Ammonium Sulfate	100	D	1.2	% w/v	28DAP	B				
14	Capreno Premix	3.45	SC	0.081	lb ai/A	PRE	A	15.7 a	83.3 b	30.0 d	79.0 b
	Abundit.....glyphosate	3	SC	0.75	lb ae/A	28DAP	B				
	Dry Ammonium Sulfate	100	D	1.2	% w/v	28DAP	B				
LSD (P=.05)							5.70	6.93	10.41	10.76	16.61
Standard Deviation							3.40	4.13	6.20	6.41	9.90
CV							43.08	4.51	8.32	7.16	11.17
Replicate F							0.993	1.677	0.919	3.134	5.102
Replicate Prob(F)							0.3840	0.2065	0.4116	0.0603	0.0135
Treatment F							6.710	125.387	54.086	50.537	21.007
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

						IPOSS	DIGSA
Weed Code							
Crop Code							
Weed or Crop Name						Morninglry	Large
Weed or Crop Name						Species	Crabgras
Rating Data Type						Control	Control
Rating Unit						%	%
Rating Date						06/21/11	06/21/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Grow Stg	Appl Code
1	Untreated Check						
						0.0 e	0.0 e
2	Resolve SG.....rimsulfuron	25	SG	0.0156	lb ai/A	PRE	A
	Callisto.....mesotrione	50	WG	0.14	lb ai/A	PRE	A
						56.7 d	94.0 abc
3	Resolve SG.....rimsulfuron	25	SG	0.0234	lb ai/A	PRE	A
	Callisto.....mesotrione	50	WG	0.14	lb ai/A	PRE	A
						60.0 cd	88.3 bcd
4	Resolve SG.....rimsulfuron	25	SG	0.0156	lb ai/A	PRE	A
	Harmony SG.....thifensulfuron	50	SG	0.0156	lb ai/A	PRE	A
	Callisto.....mesotrione	50	WG	0.14	lb ai/A	PRE	A
						73.3 a-d	90.7 abc
5	Resolve SG.....rimsulfuron	25	SG	0.0156	lb ai/A	PRE	A
	Callisto.....mesotrione	50	WG	0.14	lb ai/A	PRE	A
	Atrazine 4L	4	L	1	lb ai/A	PRE	A
						60.0 cd	87.3 cd
6	Resolve SG.....rimsulfuron	25	SG	0.0234	lb ai/A	PRE	A
	Callisto.....mesotrione	50	WG	0.14	lb ai/A	PRE	A
	Atrazine 4L	4	L	1	lb ai/A	PRE	A
						63.7 cd	89.0 bcd
7	Resolve SG.....rimsulfuron	25	SG	0.0156	lb ai/A	PRE	A
	Harmony SG.....thifensulfuron	50	SG	0.0156	lb ai/A	PRE	A
	Callisto.....mesotrione	50	WG	0.14	lb ai/A	PRE	A
	Atrazine 4L	4	L	1	lb ai/A	PRE	A
						58.3 cd	79.3 d
8	Resolve SG.....rimsulfuron	25	SG	0.0156	lb ai/A	PRE	A
	Callisto.....mesotrione	50	WG	0.14	lb ai/A	PRE	A
	Atrazine 4L	4	L	1	lb ai/A	PRE	A
	Abundit.....glyphosate	3	SC	0.75	lb ae/A	28DAP	B
	Dry Ammonium Sulfate	100	D	1.2	% w/v	28DAP	B
						90.3 a	100.0 a
9	Resolve SG.....rimsulfuron	25	SG	0.0234	lb ai/A	PRE	A
	Callisto.....mesotrione	50	WG	0.14	lb ai/A	PRE	A
	Atrazine 4L	4	L	1	lb ai/A	PRE	A
	Abundit.....glyphosate	3	SC	0.75	lb ae/A	28DAP	B
	Dry Ammonium Sulfate	100	D	1.2	% w/v	28DAP	B
						90.0 a	100.0 a
10	Resolve SG.....rimsulfuron	25	SG	0.0156	lb ai/A	PRE	A
	Harmony SG.....thifensulfuron	50	SG	0.0156	lb ai/A	PRE	A
	Callisto.....mesotrione	50	WG	0.14	lb ai/A	PRE	A
	Atrazine 4L	4	L	1	lb ai/A	PRE	A
	Abundit.....glyphosate	3	SC	0.75	lb ae/A	28DAP	B
	Dry Ammonium Sulfate	100	D	1.2	% w/v	28DAP	B
						91.0 a	100.0 a

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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							IPOSS	DIGSA
							Morninglry	Large
							Species	Crabgras
							Control	Control
							%	%
							06/21/11	06/21/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code	
11	Resolve SG.....rimsulfuron	25	SG	0.0156	lb ai/A	PRE	A	77.0 abc
	Callisto.....mesotrione	50	WG	0.14	lb ai/A	PRE	A	97.7 ab
	Cinch ATZ Premix	5.5	L	2.2	lb ai/A	PRE	A	
12	Lumax Premix	3.95	SC	2.96	lb ai/A	PRE	A	67.7 bcd
13	Lumax Premix	3.95	SC	2.47	lb ai/A	PRE	A	91.7 a
	Abundit.....glyphosate	3	SC	0.75	lb ae/A	28DAP	B	100.0 a
	Dry Ammonium Sulfate	100	D	1.2	% w/v	28DAP	B	
14	Capreno Premix	3.45	SC	0.081	lb ai/A	PRE	A	83.7 ab
	Abundit.....glyphosate	3	SC	0.75	lb ae/A	28DAP	B	100.0 a
	Dry Ammonium Sulfate	100	D	1.2	% w/v	28DAP	B	
LSD (P=.05)							19.65	10.14
Standard Deviation							11.70	6.04
CV							17.01	6.9
Replicate F							0.007	5.980
Replicate Prob(F)							0.9926	0.0073
Treatment F							12.485	55.573
Treatment Prob(F)							0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Zidua Efficacy in Field Corn	
Trial ID: CRN19-11	Cooperator: BASF
Location: Field #14	Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION			
Study Director: Mark VanGessel	Title: Extension Specialist, Weed Science		
Affiliation: University of Delaware Research & Education Center			
Address: 16483 County Seat Hwy	City: Georgetown	State: DE	Zip Code: 19947

Crop 1: Field Corn	ZEAMX	Variety: H5753VTS	
Planting Date: 05/10/11	Planting Method: Row- Unit Planter	Depth: 2 in	
Rate: 28000 Sd/A	Row Spacing: 30 in	Seed Bed: Medium	
Soil Temperature: 74 F	Soil Moisture: Moist	Emergence Date: 05/17/11	

SITE AND DESIGN			
Plot Width, Unit: 10 FT	Plot Length, Unit: 25 FT	Reps: 3	
Site Type: Field	Study Design: RANDOMIZED COMPLETE BLOCK		
Tillage Type: No Tillage/Soybean Stubble			

MAINTENANCE	
Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at layby. Total N applied was 220 lb/A.	

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	06/03/11	Roundup WeatherMax	4.5	AS	22	fl oz/A

SOIL DESCRIPTION			
% Sand: 79	% OM: 1.5	Texture: loamy sand	
% Silt: 14	pH: 6.0		
% Clay: 7	CEC: 5.2	Fert. Level: Medium	
Irrigation/Type: Sprinkler - Lateral Move		Frequency: as needed	
Overall Moisture Conditions: Maintained Moist			
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown			
Distance: 0.3	Unit: mi		

APPLICATION DESCRIPTION	
	A
Application Date:	05/11/11
Time of Day:	3:00 pm
Application Method:	Spray
Application Timing:	PRE
Applic. Placement:	Brdcst
Air Temp., Unit:	66 F
% Relative Humidity:	54
Wind Velocity, Unit:	5 mph
Wind Direction:	East
Dew Presence (Y/N):	N
Soil Temp., Unit:	67 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	15

APPLICATION EQUIPMENT	
	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Zidua Efficacy in Field Corn											
Trial ID: CRN19-11 Cooperator: BASF											
Location: Field #14 Investigator: Mark VanGessel											
Weed Code	Crop Code	Weed or Crop Name	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date	ZEAMX Field Corn Stunting % 05/26/11	ZEAMX Field Corn Stunting % 06/03/11	AMAPA Palmer Amaranth Control % 06/03/11	IPOSS Morngrly Species Control % 06/03/11	AMAPA Palmer Amaranth Control % 06/19/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Untreated Check						0.0b	0.0d	0.0c	0.0e	0.0c
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	PRE	A					
	Dry Ammonium Sulfate	100	D	2.04 % w/v	PRE	A					
2	Zidua.....pyroxasulfone	85	WG	0.106 lb ai/A	PRE	A	0.0b	2.3cd	97.3ab	88.3abc	100.0a
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	PRE	A					
	Dry Ammonium Sulfate	100	D	2.04 % w/v	PRE	A					
3	Zidua.....pyroxasulfone	85	WG	0.212 lb ai/A	PRE	A	0.0b	7.0ab	94.0b	86.7bc	100.0a
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	PRE	A					
	Dry Ammonium Sulfate	100	D	2.04 % w/v	PRE	A					
4	Zidua.....pyroxasulfone	85	WG	0.08 lb ai/A	PRE	A	11.3a	8.0a	100.0a	97.7a	100.0a
	Sharpen.....saflufenacil	2.85	SC	0.0445 lb ai/A	PRE	A					
	Methylated Seed Oil	100	L	1 % v/v	PRE	A					
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	PRE	A					
	Dry Ammonium Sulfate	100	D	2.04 % w/v	PRE	A					
5	Zidua.....pyroxasulfone	85	WG	0.08 lb ai/A	PRE	A	0.0b	8.3a	100.0a	94.7ab	100.0a
	Verdict Premix	5.57	EC	0.435 lb ai/A	PRE	A					
	Methylated Seed Oil	100	L	1 % v/v	PRE	A					
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	PRE	A					
	Dry Ammonium Sulfate	100	D	2.04 % w/v	PRE	A					
6	Dual II Magnum..s-metolachlor	7.64	E	1.27 lb ai/A	PRE	A	0.0b	0.0d	100.0a	33.3d	100.0a
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	PRE	A					
	Dry Ammonium Sulfate	100	D	2.04 % w/v	PRE	A					
7	Zidua.....pyroxasulfone	85	WG	0.08 lb ai/A	PRE	A	0.0b	6.3abc	100.0a	88.3abc	100.0a
	Atrazine 4L	4	L	1 lb ai/A	PRE	A					
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	PRE	A					
	Dry Ammonium Sulfate	100	D	2.04 % w/v	PRE	A					
8	Zidua.....pyroxasulfone	85	WG	0.106 lb ai/A	PRE	A	0.0b	3.3bcd	100.0a	92.3ab	100.0a
	Atrazine 4L	4	L	1 lb ai/A	PRE	A					
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	PRE	A					
	Dry Ammonium Sulfate	100	D	2.04 % w/v	PRE	A					
9	Lexar Premix	3.7	FL	2.78 lb ai/A	PRE	A	0.0b	0.0d	100.0a	93.0ab	100.0a
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	PRE	A					
	Dry Ammonium Sulfate	100	D	2.04 % w/v	PRE	A					
10	Dual II Magnum..s-metolachlor	7.64	E	1.27 lb ai/A	PRE	A	0.0b	0.0d	100.0a	80.7c	99.0b
	Atrazine 4L	4	L	1 lb ai/A	PRE	A					
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	PRE	A					
	Dry Ammonium Sulfate	100	D	2.04 % w/v	PRE	A					
LSD (P=.05)							0.63	4.13	3.74	10.91	0.94
Standard Deviation							0.37	2.41	2.18	6.36	0.55
CV							32.22	68.16	2.45	8.42	0.61
Replicate F							1.000	1.747	1.374	7.436	1.000
Replicate Prob(F)							0.3874	0.2026	0.2784	0.0044	0.3874
Treatment F							289.000	6.567	621.187	77.541	9978.778
Treatment Prob(F)							0.0001	0.0004	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							IPOSS
Crop Code							
Weed or Crop Name							Morngrly
Weed or Crop Name							Species
Rating Data Type							Control
Rating Unit							%
Rating Date							06/19/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code
1	Untreated Check						0.0 d
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	PRE A	
	Dry Ammonium Sulfate	100	D	2.04	% w/v	PRE A	
2	Zidua.....pyroxasulfone	85	WG	0.106	lb ai/A	PRE A	83.3 bc
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	PRE A	
	Dry Ammonium Sulfate	100	D	2.04	% w/v	PRE A	
3	Zidua.....pyroxasulfone	85	WG	0.212	lb ai/A	PRE A	84.7 bc
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	PRE A	
	Dry Ammonium Sulfate	100	D	2.04	% w/v	PRE A	
4	Zidua.....pyroxasulfone	85	WG	0.08	lb ai/A	PRE A	90.3 ab
	Sharpen.....saflufenacil	2.85	SC	0.0445	lb ai/A	PRE A	
	Methylated Seed Oil	100	L	1	% v/v	PRE A	
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	PRE A	
	Dry Ammonium Sulfate	100	D	2.04	% w/v	PRE A	
5	Zidua.....pyroxasulfone	85	WG	0.08	lb ai/A	PRE A	94.7 a
	Verdict Premix	5.57	EC	0.435	lb ai/A	PRE A	
	Methylated Seed Oil	100	L	1	% v/v	PRE A	
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	PRE A	
	Dry Ammonium Sulfate	100	D	2.04	% w/v	PRE A	
6	Dual II Magnum..s-metolachlor	7.64	E	1.27	lb ai/A	PRE A	79.3 c
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	PRE A	
	Dry Ammonium Sulfate	100	D	2.04	% w/v	PRE A	
7	Zidua.....pyroxasulfone	85	WG	0.08	lb ai/A	PRE A	82.0 bc
	Atrazine 4L	4	L	1	lb ai/A	PRE A	
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	PRE A	
	Dry Ammonium Sulfate	100	D	2.04	% w/v	PRE A	
8	Zidua.....pyroxasulfone	85	WG	0.106	lb ai/A	PRE A	82.7 bc
	Atrazine 4L	4	L	1	lb ai/A	PRE A	
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	PRE A	
	Dry Ammonium Sulfate	100	D	2.04	% w/v	PRE A	
9	Lexar Premix	3.7	FL	2.78	lb ai/A	PRE A	81.0 c
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	PRE A	
	Dry Ammonium Sulfate	100	D	2.04	% w/v	PRE A	
10	Dual II Magnum..s-metolachlor	7.64	E	1.27	lb ai/A	PRE A	82.0 bc
	Atrazine 4L	4	L	1	lb ai/A	PRE A	
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	PRE A	
	Dry Ammonium Sulfate	100	D	2.04	% w/v	PRE A	
LSD (P=.05)							8.81
Standard Deviation							5.13
CV							6.75
Replicate F							3.597
Replicate Prob(F)							0.0485
Treatment F							83.617
Treatment Prob(F)							0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Early Preplant Weed Control with Fierce in Field Corn

Trial ID: CRN20-11 Cooperator: Valent
 Location: Field #35 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Field Corn **ZEAMX** **Variety:** H5753VTS
Planting Date: 05/10/11 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 18000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Friable/Trashy
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/17/11

SITE AND DESIGN

Plot Width, Unit: 20 FT **Plot Length, Unit:** 325 FT **Reps:** 1
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 11.6 gal/A (25 lb N & 24 lb P) 2 x 2 were applied at planting. The study was sidedressed with 30 gal/A 30% UAN solution (98 lb N) at layby. Total N applied was 123 lb/A.
 The crop was destroyed with mowing on 6-29-11.

SOIL DESCRIPTION

% Sand: 82 **% OM:** 1.2 **Texture:** loamy sand
% Silt: 11 **pH:** 6.0
% Clay: 7 **CEC:** 5.8 **Fert. Level:** Medium

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.1 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	05/02/11	Not
Time of Day:	10:00 am	applied
Application Method:	Spray	See
Application Timing:	7EPP	comments
Applic. Placement:	Brdcst	
Air Temp., Unit:	60 F	
% Relative Humidity:	75	
Wind Velocity, Unit:	1 mph	
Wind Direction:	Southwest	
Dew Presence (Y/N):	Y	
Soil Temp., Unit:	58 F	
Soil Surf. Moisture:	Moist	
Root Zone Moisture:	Moist	
Leaf Surf. Moisture:	Wet	
% Cloud Cover:	60	

APPLICATION EQUIPMENT		
	A	B
Appl. Equipment:	Tractor	
Operating Pressure:	40 psi	
Nozzle Type:	AIRMIX	
Nozzle Size:	11002	
Nozzle Spacing, Unit:	20 in	
Boom Length, Unit:	6 nozl	
Boom Height, Unit:	20 in	
Ground Speed, Unit:	3 mph	
Carrier:	water	
Spray Volume, Unit:	20 gpa	
Propellant:	Comp. Air	

Trial Comments

Trial was not replicated, but ratings are average of three places of observation in each treatment. The 42DAT treatments were not applied because the corn was too large without high-boy equipment.

5/25/11: Excellent burndown control with all treatments. Glyphosate alone did not control vetch; but Fierce and Bicep provided 100% control.

6/4/11: All winter annuals wer controlled with both treatments.

Early Preplant Weed Control with Fierce in Field Corn											
Trial ID: CRN20-11		Cooperator: Valent									
Location: Field #35		Investigator: Mark VanGessel									
Weed Code	Crop Code	Weed or Crop Name	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date	ZEAMX Field Corn Stunting %	ZEAMX Field Corn Stunting %	AMAPA Palmer Amaranth Control %	AMBEL Common Ragweed Control %	IPOSS Morngly Species Control %
							05/25/11	06/04/11	06/04/11	06/04/11	06/04/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Grow Stg	Appl Code				
1	Untreated Check							0.0	0.0	0.0	0.0
2	Fierce Premix	76	WG	0.142	lb ai/A	7EPP	A	25.0	15.0	70.0	80.0
	Atrazine 4L	4	L	1	lb ai/A	7EPP	A				
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	7EPP	A				
	2,4-D ester	3.8	L	0.475	lb ae/A	7EPP	A				
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	42DAT	B				
	Dry Ammonium Sulfate	100	D	1.5	% w/v	42DAT	B				
3	Bicep II Magnum Premix	5.5	L	2.2	lb ai/A	7EPP	A	0.0	0.0	85.0	80.0
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	7EPP	A				
	2,4-D ester	3.8	L	0.475	lb ae/A	7EPP	A				
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	42DAT	B				
	Dry Ammonium Sulfate	100	D	1.5	% w/v	42DAT	B				
LSD (P=.05)								.	.	.	.
Standard Deviation								.	.	.	.
CV								.	.	.	.

Weed Code	Crop Code	Weed or Crop Name	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date	DIGSA Large Crabgrass Control %	AMAPA Palmer Amaranth Control %	AMBEL Common Ragweed Control %	IPOSS Morngly Species Control %	DIGSA Large Crabgrass Control %
							06/04/11	06/16/11	06/16/11	06/16/11	06/16/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Grow Stg	Appl Code				
1	Untreated Check							0.0	0.0	0.0	0.0
2	Fierce Premix	76	WG	0.142	lb ai/A	7EPP	A	80.0	96.0	60.0	45.0
	Atrazine 4L	4	L	1	lb ai/A	7EPP	A				
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	7EPP	A				
	2,4-D ester	3.8	L	0.475	lb ae/A	7EPP	A				
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	42DAT	B				
	Dry Ammonium Sulfate	100	D	1.5	% w/v	42DAT	B				
3	Bicep II Magnum Premix	5.5	L	2.2	lb ai/A	7EPP	A	100.0	85.0	60.0	75.0
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	7EPP	A				
	2,4-D ester	3.8	L	0.475	lb ae/A	7EPP	A				
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	42DAT	B				
	Dry Ammonium Sulfate	100	D	1.5	% w/v	42DAT	B				
LSD (P=.05)								.	.	.	.
Standard Deviation								.	.	.	.
CV								.	.	.	.

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Non-Atrazine Herbicide Programs for Weed Control in No-Till Sweet Corn

Trial ID: SCRN2-11 Cooperator: PA Vegetable Growers
 Location: Field #18 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Large Crabgrass	DIGSA	Digitaria sanguinalis (L.) Scop.
2.	Common Ragweed	AMBEL	Ambrosia artemisifolia L.
3.	Morningglory Species	IPOSS	Ipomoea sp.

Crop 1: Sweet Corn **ZEAMS** **Variety:** BC0805
Planting Date: 05/19/11 **Planting Method:** Row- Unit Planter **Depth:** 0.75 in
Rate: 24000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Firm/Trashy
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/25/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	05/19/11	Roundup WeatherMax	4.5	AS	40	fl oz/A

SOIL DESCRIPTION

% Sand: 81 **% OM:** 1.3 **Texture:** loamy sand
% Silt: 12 **pH:** 5.7 **Soil Name:** Pepperbox Loamy sand
% Clay: 7 **CEC:** 4.6 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.4 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	05/19/11	06/09/11
Time of Day:	1:30 pm	11:30 am
Application Method:	Spray	Spray
Application Timing:	Pre	MPost
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	72 F	92 F
% Relative Humidity:	61	44
Wind Velocity, Unit:	3 mph	3 mph
Wind Direction:	SW	W
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	72 F	89 F
Soil Surf. Moisture:	Moist	Moist
Root Zone Moisture:	Moist	Moist
Leaf Surf. Moisture:		Dry
% Cloud Cover:	90	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code:	ZEAMS	ZEAMS
Growth Stage:		V5
Height, Unit:		11 in
Crop Health:		Good

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	DIGSA	DIGSA
Growth Stage:		1-4 tiller
Height, Unit:		3 in
Density, Unit:		0-10 m2
Weed 2 Code:	AMBEL	AMBEL
Growth Stage:		4-6 lf
Height, Unit:		2.5 in
Density, Unit:		0-5 m2
Weed 3 Code:	IPOSS	IPOSS
Growth Stage:		1-3 lf
Height, Unit:		1.5 in
Density, Unit:		0-15 m2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	20 in	28 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air

Trial Comments

6/3/11 - Control of primrose is poor in first 3 plots on left of trial, plots starting 101, 102 and 103.

6/13/11 - The following plots had weeds in row only: 107, 113, and 314, Plot 308 looks untreated.

6/14/11 - Injury based on POST treatments.

6/27/11 - Plot 114 - 20% stunting, Plot 204 - 20% stunting, Plot 303 - 30% stunting.

Non-Atrazine Herbicide Programs for Weed Control in No-Till Sweet Corn

Trial ID: SCRN2-11 Cooperator: PA Vegetable Growers

Location: Field #18 Investigator: Mark VanGessel

Weed Code							ZEAMS	ZEAMS	TTTTT	AMAPA	DIGSA
Crop Code							Sweet	Sweet	Total	Palmer	Large
Weed or Crop Name							Corn	Corn	Burndown	Amaranth	Crabgras
Weed or Crop Name							Stunting	Stunting	Control	Control	Control
Rating Data Type							%	%	%	%	%
Rating Unit							06/03/11	06/13/11	06/13/11	06/13/11	06/13/11
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Untreated Check						0.0 d	0.0 a	78.3 a	0.0 c	0.0 c
2	Lumax Premix	3.95	SC	2.47 lb ai/A	PRE	A	0.0 d	2.3 a	99.0 a	100.0 a	94.0 a
3	Bicep II Magnum Premix Prowl H2O.....pendimethalin	5.5L 3.8	L CS	2.2 lb ai/A 0.95 lb ai/A	PRE	A	0.0 d	2.3 a	99.0 a	100.0 a	90.0 a
4	Camix Premix	3.67	SC	1.83 lb ai/A	PRE	A	0.0 d	0.0 a	96.3 a	100.0 a	95.0 a
5	Verdict Premix	5.57	EC	0.566 lb ai/A	PRE	A	6.3 c	0.0 a	93.7 a	100.0 a	83.3 a
6	Bicep II Magnum Premix Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	5.5L 2.8 4L 100L 100L	L SC L L	1.79 lb ai/A 0.0164 lb ai/A 0.5 lb ai/A 1.25 % v/v 1.25 % v/v	PRE MPost MPost MPost MPost	A B B B B	0.0 d	0.0 a	93.3 a	95.0 a	90.0 a
7	Camix Premix Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	3.67 2.8 100L 100L	SC SC L L	1.83 lb ai/A 0.0164 lb ai/A 1.25 % v/v 1.25 % v/v	PRE MPost MPost MPost	A B B B	0.0 d	0.0 a	84.7 a	100.0 a	81.7 a
8	Zidua.....pyroxasulfone Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	85 2.8 100L 100L	WG SC L L	0.106 lb ai/A 0.0164 lb ai/A 1.25 % v/v 1.25 % v/v	PRE MPost MPost MPost	A B B B	12.0 a	5.7 a	79.0 a	95.0 a	87.0 a
9	Dual II Magnum..s-metolachlor Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	7.64 2.8 4L 100L 100L	E SC L L L	1.6 lb ai/A 0.0164 lb ai/A 0.5 lb ai/A 1.25 % v/v 1.25 % v/v	PRE MPost MPost MPost MPost	A B B B B	0.0 d	2.3 a	76.7 a	91.7 a	88.3 a
10	Camix Premix Ignite 280.....glufosinate Dry Ammonium Sulfate	3.67 2.34 100D	SC SL D	1.83 lb ai/A 0.402 lb ai/A 1.02 % w/v	PRE MPost MPost	A B B	0.0 d	5.7 a	81.7 a	97.7 a	95.0 a
11	Zidua.....pyroxasulfone Ignite 280.....glufosinate Dry Ammonium Sulfate	85 2.34 100D	WG SL D	0.106 lb ai/A 0.402 lb ai/A 1.02 % w/v	PRE MPost MPost	A B B	8.0 bc	7.3 a	76.0 a	100.0 a	92.7 a

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						ZEAMS	ZEAMS	TTTTT	AMAPA	DIGSA		
Crop Code						Sweet	Sweet	Total	Palmer	Large		
Weed or Crop Name						Corn	Corn	Burndown	Amaranth	Crabgras		
Weed or Crop Name						Stunting	Stunting	Control	Control	Control		
Rating Data Type						%	%	%	%	%		
Rating Unit						06/03/11	06/13/11	06/13/11	06/13/11	06/13/11		
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code					
12	Dual II Magnum..s-metolachlor	7.64	E	1.6 lb ai/A	PRE	A		0.0 d	3.3 a	68.3 a	56.7 b	53.3 b
	Ignite 280.....glufosinate	2.34	SL	0.402 lb ai/A	MPost	B						
	Atrazine 4L	4	L	0.5 lb ai/A	MPost	B						
	Dry Ammonium Sulfate	100	D	1.02 % w/v	MPost	B						
13	Verdict Premix	5.57	EC	0.566 lb ai/A	PRE	A		10.0 ab	3.3 a	91.3 a	100.0 a	81.7 a
	Ignite 280.....glufosinate	2.34	SL	0.402 lb ai/A	MPost	B						
	Dry Ammonium Sulfate	100	D	1.02 % w/v	MPost	B						
14	Dual II Magnum..s-metolachlor	7.64	E	1.6 lb ai/A	PRE	A		0.0 d	0.0 a	93.7 a	96.7 a	85.0 a
	Option.....foramsulfuron	35	WG	0.0328 lb ai/A	MPost	B						
	2,4-D amine	3.8	L	0.237 lb ae/A	MPost	B						
	Methylated Seed Oil	100	L	1.25 % v/v	MPost	B						
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	MPost	B						
LSD (P=.05)						2.87	6.98	20.24	23.67	26.81		
Standard Deviation						1.71	4.16	12.06	14.10	15.97		
CV						65.78	179.93	13.94	16.02	20.02		
Replicate F						0.498	0.010	0.183	0.534	0.484		
Replicate Prob(F)						0.6132	0.9904	0.8340	0.5926	0.6217		
Treatment F						20.101	1.094	2.014	11.621	7.487		
Treatment Prob(F)						0.0001	0.4053	0.0624	0.0001	0.0001		

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							ZEAMS	AMAPA	DIGSA	IPOSS	AMAPA	
Crop Code							Sweet	Palmer	Large	Morningly	Palmer	
Weed or Crop Name							Corn	Amaranth	Crabgrass	Species	Amaranth	
Weed or Crop Name							Injury	Control	Control	Control	Control	
Rating Data Type							%	%	%	%	%	
Rating Unit							06/14/11	06/27/11	06/27/11	06/27/11	07/27/11	
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code					
1	Untreated Check							0.0 e	0.0 c	0.0 d	0.0 f	0.0 d
2	Lumax Premix	3.95	SC	2.47	lb ai/A	PRE	A		100.0 a	84.1 ab	84.9 abc	100.0 a
3	Bicep II Magnum Premix Prowl H2O.....pendimethalin	5.5L 3.8	L CS	2.2 0.95	lb ai/A lb ai/A	PRE	A A		92.7 ab	68.3 b	51.7 e	78.3 c
4	Camix Premix	3.67	SC	1.83	lb ai/A	PRE	A		96.7 ab	96.4 a	58.8 de	86.7 abc
5	Verdict Premix	5.57	EC	0.566	lb ai/A	PRE	A		95.4 ab	41.4 c	67.0 cde	96.7 ab
6	Bicep II Magnum Premix Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	5.5L 2.8 4L 100L 100L	L SC L L L	1.79 0.0164 0.5 1.25 1.25	lb ai/A lb ai/A lb ai/A % v/v % v/v	PRE MPost MPost MPost MPost	A B B B B	3.7 bc	100.0 a	95.0 a	77.3 a-d	84.3 bc
7	Camix Premix Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	3.67 2.8 100L 100L	SC SC L L	1.83 0.0164 1.25 1.25	lb ai/A lb ai/A % v/v % v/v	PRE MPost MPost MPost	A B B B	3.0 bcd	100.0 a	100.0 a	68.8 b-e	91.7 abc
8	Zidua.....pyroxasulfone Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	85 2.8 100L 100L	WG SC L L	0.106 0.0164 1.25 1.25	lb ai/A lb ai/A % v/v % v/v	PRE MPost MPost MPost	A B B B	0.0 e	100.0 a	100.0 a	58.3 de	95.0 ab
9	Dual II Magnum..s-metolachlor Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	7.64 2.8 4L 100L 100L	E SC L L L	1.6 0.0164 0.5 1.25 1.25	lb ai/A lb ai/A lb ai/A % v/v % v/v	PRE MPost MPost MPost MPost	A B B B B	2.0 cde	100.0 a	100.0 a	91.0 ab	92.7 ab
10	Camix Premix Ignite 280.....glufosinate Dry Ammonium Sulfate	3.67 2.34 100D	SC SL D	1.83 0.402 1.02	lb ai/A lb ai/A % w/v	PRE MPost MPost	A B B	1.0 de	93.3 ab	95.0 a	74.0 a-e	83.3 bc
11	Zidua.....pyroxasulfone Ignite 280.....glufosinate Dry Ammonium Sulfate	85 2.34 100D	WG SL D	0.106 0.402 1.02	lb ai/A lb ai/A % w/v	PRE MPost MPost	A B B	1.0 de	100.0 a	98.3 a	85.0 abc	96.7 ab

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						ZEAMS	AMAPA	DIGSA	IPOSS	AMAPA		
Crop Code						Sweet	Palmer	Large	Morningly	Palmer		
Weed or Crop Name						Corn	Amaranth	Crabgras	Species	Amaranth		
Weed or Crop Name						Injury	Control	Control	Control	Control		
Rating Data Type						%	%	%	%	%		
Rating Unit						06/14/11	06/27/11	06/27/11	06/27/11	07/27/11		
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code					
12	Dual II Magnum..s-metolachlor	7.64	E	1.6 lb ai/A	PRE	A		4.3 b	100.0 a	86.0 ab	86.7 abc	89.3 abc
	Ignite 280.....glufosinate	2.34	SL	0.402 lb ai/A	MPost	B						
	Atrazine 4L	4	L	0.5 lb ai/A	MPost	B						
	Dry Ammonium Sulfate	100	D	1.02 % w/v	MPost	B						
13	Verdict Premix	5.57	EC	0.566 lb ai/A	PRE	A		0.0 e	88.3 b	91.7 a	87.3 abc	85.0 bc
	Ignite 280.....glufosinate	2.34	SL	0.402 lb ai/A	MPost	B						
	Dry Ammonium Sulfate	100	D	1.02 % w/v	MPost	B						
14	Dual II Magnum..s-metolachlor	7.64	E	1.6 lb ai/A	PRE	A		19.0 a	99.0 a	94.5 a	96.7 a	86.7 abc
	Option.....foramsulfuron	35	WG	0.0328 lb ai/A	MPost	B						
	2,4-D amine	3.8	L	0.237 lb ae/A	MPost	B						
	Methylated Seed Oil	100	L	1.25 % v/v	MPost	B						
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	MPost	B						
LSD (P=.05)						2.30	8.99	22.72	23.26	13.76		
Standard Deviation						1.34	5.34	13.38	13.65	8.20		
CV						39.42	5.91	16.27	19.36	9.84		
Replicate F						1.392	0.280	2.630	5.260	1.897		
Replicate Prob(F)						0.2741	0.7579	0.0957	0.0146	0.1702		
Treatment F						54.301	72.552	13.691	9.594	27.320		
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	0.0001		

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							CHEAL	DIGSA	IPOSS	ZEAMS	ZEAMS
Crop Code							Common	Large	Morningly	Harvest	Harvest
Weed or Crop Name							Lambqtrs	Crabgras	Species		
Weed or Crop Name							Control	Control	Control	Yield	Yield
Rating Data Type							%	%	%	# ears	T-US
Rating Unit							07/27/11	07/27/11	07/27/11	07/27/11	07/27/11
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg					
1	Untreated Check						0.0c	0.0e	0.0c	13.7c	1.0c
2	Lumax Premix	3.95	SC	2.47 lb ai/A	PRE	A	100.0a	76.9bc	63.0ab	58.6a	3.9a
3	Bicep II Magnum Premix Prowl H2O.....pendimethalin	5.5L 3.8	L CS	2.2 lb ai/A 0.95 lb ai/A	PRE	A	100.0a	58.3d	66.7ab	45.7ab	3.0ab
4	Camix Premix	3.67	SC	1.83 lb ai/A	PRE	A	100.0a	88.5ab	77.6ab	42.7b	2.9ab
5	Verdict Premix	5.57	EC	0.566 lb ai/A	PRE	A	100.0a	62.5cd	91.1a	34.7b	2.3b
6	Bicep II Magnum Premix Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	5.5L 2.8 4L 100L 100L	L SC L L L	1.79 lb ai/A 0.0164 lb ai/A 0.5 lb ai/A 1.25 % v/v 1.25 % v/v	PRE MPost	A B B B B	93.3ab	86.3ab	52.7b	40.0b	2.5b
7	Camix Premix Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	3.67 2.8 100L 100L	SC SC L L	1.83 lb ai/A 0.0164 lb ai/A 1.25 % v/v 1.25 % v/v	PRE MPost	A B B B	100.0a	94.7a	60.8ab	36.7b	2.5b
8	Zidua.....pyroxasulfone Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	85 2.8 100L 100L	WG SC L L	0.106 lb ai/A 0.0164 lb ai/A 1.25 % v/v 1.25 % v/v	PRE MPost	A B B B	100.0a	88.3ab	69.0ab	49.6ab	3.2ab
9	Dual II Magnum..s-metolachlor Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	7.64 2.8 4L 100L 100L	E SC L L L	1.6 lb ai/A 0.0164 lb ai/A 0.5 lb ai/A 1.25 % v/v 1.25 % v/v	PRE MPost	A B B B B	93.3ab	97.0a	82.0ab	39.3b	2.5b
10	Camix Premix Ignite 280.....glufosinate Dry Ammonium Sulfate	3.67 2.34 100D	SC SL D	1.83 lb ai/A 0.402 lb ai/A 1.02 % w/v	PRE MPost	A B B	91.7b	88.3ab	58.3ab	41.0b	2.8ab
11	Zidua.....pyroxasulfone Ignite 280.....glufosinate Dry Ammonium Sulfate	85 2.34 100D	WG SL D	0.106 lb ai/A 0.402 lb ai/A 1.02 % w/v	PRE MPost	A B B	96.7ab	95.3a	84.7ab	34.7b	2.3b

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

							CHEAL	DIGSA	IPOSS	ZEAMS	ZEAMS
							Common	Large	Morningly	Harvest	Harvest
							Lambqtrs	Crabgras	Species		
							Control	Control	Control	Yield	Yield
							%	%	%	# ears	T-US
							07/27/11	07/27/11	07/27/11	07/27/11	07/27/11
Trt	Treatment	Form	Form	Rate	Grow	Appl					
No.	Name	Conc	Type	Rate	Stg	Code					
12	Dual II Magnum..s-metolachlor	7.64	E	1.6 lb ai/A	PRE	A	97.3 ab	83.3 ab	75.0 ab	39.3 b	2.6 b
	Ignite 280.....glufosinate	2.34	SL	0.402 lb ai/A	MPost	B					
	Atrazine 4L	4	L	0.5 lb ai/A	MPost	B					
	Dry Ammonium Sulfate	100	D	1.02 % w/v	MPost	B					
13	Verdict Premix	5.57	EC	0.566 lb ai/A	PRE	A	100.0 a	83.3 ab	86.0 ab	46.7 ab	3.1 ab
	Ignite 280.....glufosinate	2.34	SL	0.402 lb ai/A	MPost	B					
	Dry Ammonium Sulfate	100	D	1.02 % w/v	MPost	B					
14	Dual II Magnum..s-metolachlor	7.64	E	1.6 lb ai/A	PRE	A	96.7 ab	90.7 ab	75.8 ab	35.2 b	2.2 b
	Option.....foramsulfuron	35	WG	0.0328 lb ai/A	MPost	B					
	2,4-D amine	3.8	L	0.237 lb ae/A	MPost	B					
	Methylated Seed Oil	100	L	1.25 % v/v	MPost	B					
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	MPost	B					
LSD (P=.05)							7.98	15.46	35.25	15.19	1.06
Standard Deviation							4.75	9.10	20.76	8.92	0.62
CV							5.24	11.66	30.83	22.38	23.71
Replicate F							0.864	3.123	2.089	3.037	2.393
Replicate Prob(F)							0.4333	0.0650	0.1487	0.0705	0.1170
Treatment F							91.604	23.003	3.514	3.792	3.239
Treatment Prob(F)							0.0001	0.0001	0.0052	0.0038	0.0090

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Impact Carryover to Double-Cropped Vegetables

Trial ID: SCRN3-11 Cooperator: PA Vegetable Growers
 Location: Field #18 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Lima Bean	PHSLU	Variety: Cypress
Planting Date: 06/30/11	Planting Method: Row- Unit Planter	Depth: 0.75 in
Rate: 5 Sd/row-ft	Row Spacing: 30 in	Seed Bed: Medium
Soil Temperature: 80 F	Soil Moisture: Moist	Emergence Date: 07/04/11
Crop 2: Snap Bean	PHSVN	Variety: Slenderpack, Envy
Planting Date: 06/30/11	Planting Method: Row- Unit Planter	Depth: 0.75 in
Rate: 5 Sd/row-ft	Row Spacing: 30 in	Seed Bed: Medium
Soil Temperature: 80 F	Soil Moisture: Moist	Emergence Date: 07/05/11
Crop 3: Cucumber	CUMSA	Variety: Expedition
Planting Date: 06/30/11	Planting Method: Row- Push Planter	Depth: 0.5 in
Rate: 2.5 Sd/row-ft	Row Spacing: 30 in	Seed Bed: Medium
Soil Temperature: 80 F	Soil Moisture: Moist	Emergence Date: 07/04/11
Crop 4: Spinach	SPQOL	Variety: Persius
Planting Date: 09/15/11	Planting Method: Row- Unit Planter	Depth: 0.25 in
Rate: 20 lb/A	Row Spacing: 12 in	Seed Bed: Medium
Soil Temperature: 82 F	Soil Moisture: Moist	Emergence Date: 09/19/11
Crop 5: Collards	BRSOA	Variety: Georgia Southern
Planting Date: 09/15/11	Planting Method: Row- Unit Planter	Depth: 0.25 in
Rate: 3 lb/A	Row Spacing: 12 in	Seed Bed: Medium
Soil Temperature: 82 F	Soil Moisture: Moist	Emergence Date: 09/20/11
Crop 6: Kale	BRSOC	Variety: Early Curled Siberian
Planting Date: 09/15/11	Planting Method: Row- Unit Planter	Depth: 0.25 in
Rate: 3 lb/A	Row Spacing: 12 in	Seed Bed: Medium
Soil Temperature: 82 F	Soil Moisture: Moist	Emergence Date: 09/20/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3

Site Type: Field **Study Design:** SPLIT-PLOT

Tillage Type: Disked and Field Cultivated

Field Prep./Maintenance: The seedbed was prepared prior to herbicide application. The entire plot was sprayed with glyphosate on 6-3-11 to maintain the trial weed-free. The no-tillage plots were sprayed with glyphosate on 6-28-11 and the tillage plots were field cultivated on 6-29-11 prior to planting the first set of crops. The first set of crops were cultivated on 7-14-11 and 7-27-11 for weed control. The plots were mowed and lightly disked prior to planting the second set of crops.

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	06/03/11	Roundup WeatherMax	4.5	AS	44	fl oz/A
2.	06/28/11	Roundup WeatherMax	4.5	AS	32	fl oz/A

SOIL DESCRIPTION			
% Sand: 81	% OM: 1.3	Texture:	loamy sand
% Silt: 12	pH: 5.7	Soil Name:	Pepperbox Loamy sand
% Clay: 7	CEC: 4.6	Fert. Level:	Medium
Irrigation/Type: Sprinkler - Lateral Move		Frequency: as needed	
Overall Moisture Conditions: Maintained Moist			
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown			
Distance: 0.4	Unit: mi		

APPLICATION DESCRIPTION	
	A
Application Date:	05/16/11
Time of Day:	2:00 pm
Application Method:	Spray
Application Timing:	Post
Applic. Placement:	Brdcst
Air Temp., Unit:	74 F
% Relative Humidity:	76
Wind Velocity, Unit:	4 mph
Wind Direction:	East
Dew Presence (Y/N):	N
Soil Temp., Unit:	74 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	N/A
% Cloud Cover:	55

APPLICATION EQUIPMENT	
	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments	
6/3/11 - Weed control based on residual activity of Callisto +/- atrazine	
8/19/11 - for snaps Casey noted gaps in rows and counted dead plants as part of gaps.	
8/22/11 - Plot 307 - Poor stand in Envy, Slenderpack and lima rows.	
9/13/11 - Plot 103 had lots of dirt - it was sifted but Pixall harvested more beans due to depth. Yielded 25 ft - row.	
9/14/11 - Density of pods left in field from pixall harvest 1 = low, 2 = moderate, 3 = high.	
11/4/11 Late season notes difficult because of uneven growth of greens and poor stand of spinach. General notes: All crops look fine at 1 oz/A rate, regardless of tillage or addition of atrazine (trts 2,5,8, and 11). Impact at 4 oz rate (trts 4 and 10) there was injury on all crops. For 2 oz rate of Impact, no injury observed with NT, but some injury on all crops with tillage. Impact at 2 oz plus atrazine, some injury on greens with NT, but all crops had injury with tillage.	

Impact Carryover to Double-Cropped Vegetables							
Trial ID: SCRN3-11 Cooperator: PA Vegetable Growers							
Location: Field #18 Investigator: Mark VanGessel							
Weed Code			AMASS	IPOSS	PHSLU	PHSLU	PHSVN
Crop Code			Pigweed	Mornglry	Lima	Snap	Snap
Weed or Crop Name			Species	Species	Cypress	Envy	Slendrpk
Weed or Crop Name			Control	Control	Injury	Injury	Injury
Rating Data Type			%	%	%	%	%
Rating Unit			06/03/11	06/03/11	07/12/11	07/12/11	07/12/11
Rating Date							
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code	
1	No-Tillage Untreated Check						0.0e 0.0e 0.0d 0.0f 0.0f
2	No-Tillage Impact.....topramezone	2.8	SC	0.0219 lb ai/A	POST	A	61.7 d 30.0 d 3.3cd 9.3ef 5.7 def
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A	
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A	
3	No-Tillage Impact.....topramezone	2.8	SC	0.0437 lb ai/A	POST	A	85.0 c 50.0 c 3.4 cd 27.7 bcd 13.7 cde
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A	
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A	
4	No-Tillage Impact.....topramezone	2.8	SC	0.0875 lb ai/A	POST	A	94.0 b 80.0 b 14.3 a 56.0 a 40.0 a
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A	
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A	
5	No-Tillage Impact.....topramezone	2.8	SC	0.0219 lb ai/A	POST	A	95.7 ab 81.0 b 2.3cd 18.0 cde 8.0 c-f
	Atrazine 4L	4	L	0.5 lb ai/A	POST	A	
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A	
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A	
6	No-Tillage Impact.....topramezone	2.8	SC	0.0437 lb ai/A	POST	A	100.0 a 89.7 a 8.0 bc 30.0 bc 15.3 cde
	Atrazine 4L	4	L	1 lb ai/A	POST	A	
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A	
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A	
7	Tillage Untreated Check						0.0d 0.0f 0.0f
8	Tillage Impact.....topramezone	2.8	SC	0.0219 lb ai/A	POST	A	2.3cd 17.3 cde 5.0 ef
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A	
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						AMASS	IPOSS	PHSLU	PHSLU	PHSVN
Crop Code						Pigweed	Mornglry	Lima	Snap	Snap
Weed or Crop Name						Species	Species	Cypress	Envy	Slendrpk
Weed or Crop Name						Control	Control	Injury	Injury	Injury
Rating Data Type						%	%	%	%	%
Rating Unit						06/03/11	06/03/11	07/12/11	07/12/11	07/12/11
Rating Date										
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code				
9	Tillage							8.0 bc	33.7 b	17.3 cd
	Impact.....topramezone	2.8	SC	0.0437 lb ai/A	POST	A				
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A				
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A				
10	Tillage							13.3 ab	50.7 a	30.7 ab
	Impact.....topramezone	2.8	SC	0.0875 lb ai/A	POST	A				
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A				
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A				
11	Tillage							2.3 cd	13.0 def	11.0 c-f
	Impact.....topramezone	2.8	SC	0.0219 lb ai/A	POST	A				
	Atrazine 4L	4	L	0.5 lb ai/A	POST	A				
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A				
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A				
12	Tillage							6.3 c	35.0 b	20.0 bc
	Impact.....topramezone	2.8	SC	0.0437 lb ai/A	POST	A				
	Atrazine 4L	4	L	1 lb ai/A	POST	A				
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A				
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A				
LSD (P=.05)						5.84	4.26	6.20	15.09	12.14
Standard Deviation						3.21	2.34	3.65	8.91	7.17
CV						4.42	4.25	68.69	36.79	51.6
Replicate F						2.524	3.077	2.150	0.496	0.169
Replicate Prob(F)						0.1296	0.0909	0.1414	0.6157	0.8454
Treatment F						423.441	675.296	5.150	12.253	8.443
Treatment Prob(F)						0.0001	0.0001	0.0006	0.0001	0.0001

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University of Delaware

Weed Code						CUMSA	PHSLU	PHSVN	PHSVN	CUMSA	PHSLU		
Crop Code						Cucumber	Lima	Snap	Snap	Cucumber	Lima		
Weed or Crop Name						Expeditn	Cypress	Envy	Slendrp	Expeditn	Cypress		
Weed or Crop Name						Injury	StandCt	StandCt	StandCt	StandCt	Injury		
Rating Data Type						%	#/25'row	#/25'row	#/25'row	#/25'row	%		
Rating Unit						07/12/11	07/13/11	07/13/11	07/13/11	07/13/11	07/19/11		
Rating Date													
Trt	Treatment	Form	Form	Rate	Grow	Appl							
No.	Name	Conc	Type	Rate	Unit	Stg	Code						
1	No-Tillage Untreated Check							0.0 b	73.0 a	40.3 a	47.7 a	63.3 a	0.0 b
2	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0219 1.25 % 1.25 %	lb ai/A v/v v/v	POST POST POST	A A A	0.0 b	74.0 a	41.3 a	47.0 a	61.0 a	0.0 b
3	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0437 1.25 % 1.25 %	lb ai/A v/v v/v	POST POST POST	A A A	0.0 b	52.3 a	40.7 a	49.7 a	55.3 a	0.3 b
4	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0875 1.25 % 1.25 %	lb ai/A v/v v/v	POST POST POST	A A A	6.7 a	66.0 a	45.0 a	44.0 a	69.0 a	14.0 a
5	No-Tillage Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 4 L 100 L 100 L		0.0219 0.5 1.25 % 1.25 %	lb ai/A ai/A v/v v/v	POST POST POST POST	A A A A	0.0 b	72.0 a	36.0 a	44.3 a	62.7 a	0.0 b
6	No-Tillage Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 4 L 100 L 100 L		0.0437 1 1.25 % 1.25 %	lb ai/A ai/A v/v v/v	POST POST POST POST	A A A A	0.0 b	67.7 a	43.3 a	48.7 a	60.0 a	2.7 b
7	Tillage Untreated Check							0.0 b	69.0 a	43.0 a	42.0 a	62.0 a	0.0 b
8	Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0219 1.25 % 1.25 %	lb ai/A v/v v/v	POST POST POST	A A A	1.7 b	73.3 a	41.0 a	49.3 a	66.7 a	0.0 b

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University of Delaware

Weed Code						CUMSA	PHSLU	PHSVN	PHSVN	CUMSA	PHSLU	
Crop Code						Cucumber	Lima	Snap	Snap	Cucumber	Lima	
Weed or Crop Name						Expeditn	Cypress	Envy	Slendrp	Expeditn	Cypress	
Weed or Crop Name						Injury	StandCt	StandCt	StandCt	StandCt	Injury	
Rating Data Type						%	#/25'row	#/25'row	#/25'row	#/25'row	%	
Rating Unit						07/12/11	07/13/11	07/13/11	07/13/11	07/13/11	07/19/11	
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code						
9	Tillage						0.0 b	67.7 a	42.7 a	46.0 a	57.0 a	1.7 b
	Impact.....topramezone	2.8	SC	0.0437 lb ai/A	POST	A						
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A						
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A						
10	Tillage						6.3 a	71.0 a	40.0 a	46.0 a	57.7 a	13.3 a
	Impact.....topramezone	2.8	SC	0.0875 lb ai/A	POST	A						
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A						
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A						
11	Tillage						0.0 b	68.0 a	43.0 a	44.0 a	64.3 a	0.0 b
	Impact.....topramezone	2.8	SC	0.0219 lb ai/A	POST	A						
	Atrazine 4L	4	L	0.5 lb ai/A	POST	A						
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A						
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A						
12	Tillage						0.0 b	76.0 a	41.3 a	44.7 a	64.3 a	2.7 b
	Impact.....topramezone	2.8	SC	0.0437 lb ai/A	POST	A						
	Atrazine 4L	4	L	1 lb ai/A	POST	A						
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A						
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A						
LSD (P=.05)						3.42	19.60	10.49	7.49	9.15	3.94	
Standard Deviation						2.02	11.58	6.19	4.42	5.40	2.32	
CV						165.28	16.74	14.94	9.59	8.72	80.56	
Replicate F						0.517	1.085	0.544	1.127	3.124	1.096	
Replicate Prob(F)						0.6032	0.3554	0.5883	0.3420	0.0640	0.3526	
Treatment F						4.639	0.840	0.400	0.891	1.654	14.724	
Treatment Prob(F)						0.0011	0.6051	0.9410	0.5625	0.1517	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

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University of Delaware

Weed Code						PHSVN	PHSVN	CUMSA	PHSLU	PHSVN	PHSVN	
Crop Code						Snap	Snap	Cucumber	Lima	Snap	Snap	
Weed or Crop Name						Envy	Slendrp	Expeditn	Cypress	Envy	Slendrp	
Weed or Crop Name						Injury	Injury	Injury	Injury	Injury	Injury	
Rating Data Type						%	%	%	%	%	%	
Rating Unit						07/19/11	07/19/11	07/19/11	08/01/11	08/01/11	08/01/11	
Rating Date												
Trt	Treatment	Form	Form	Rate	Grow	Appl						
No.	Name	Conc	Type	Rate	Stg	Code						
1	No-Tillage Untreated Check						0.0f	0.0d	0.0c	0.0a	0.0f	0.0c
2	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0219 lb ai/A 1.25 % v/v 1.25 % v/v	POST POST POST	A A A	20.3 def	6.3 d	0.0 c	0.0 a	13.3 ef	6.7 c
3	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0437 lb ai/A 1.25 % v/v 1.25 % v/v	POST POST POST	A A A	48.3 bc	25.7 bc	3.3 bc	0.5 a	71.0 bc	30.7 b
4	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0875 lb ai/A 1.25 % v/v 1.25 % v/v	POST POST POST	A A A	71.0 a	54.3 a	8.0 ab	3.3 a	94.3 a	75.7 a
5	No-Tillage Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 4 L 100 L 100 L		0.0219 lb ai/A 0.5 lb ai/A 1.25 % v/v 1.25 % v/v	POST POST POST POST	A A A A	17.7 def	5.0 d	0.0 c	0.0 a	20.0 e	8.7 c
6	No-Tillage Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 4 L 100 L 100 L		0.0437 lb ai/A 1 lb ai/A 1.25 % v/v 1.25 % v/v	POST POST POST POST	A A A A	38.3 bcd	13.3 cd	0.0 c	3.3 a	57.0 cd	18.7 bc
7	Tillage Untreated Check						0.0f	0.0d	0.0c	0.0a	0.0f	0.0c
8	Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0219 lb ai/A 1.25 % v/v 1.25 % v/v	POST POST POST	A A A	20.3 def	4.0 d	5.0 bc	3.3 a	22.7 e	11.3 bc

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						PHSVN	PHSVN	CUMSA	PHSLU	PHSVN	PHSVN	
Crop Code						Snap	Snap	Cucumber	Lima	Snap	Snap	
Weed or Crop Name						Envy	Slendrpk	Expeditn	Cypress	Envy	Slendrpk	
Weed or Crop Name						Injury	Injury	Injury	Injury	Injury	Injury	
Rating Data Type						%	%	%	%	%	%	
Rating Unit						07/19/11	07/19/11	07/19/11	08/01/11	08/01/11	08/01/11	
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code						
9	Tillage						22.7 de	10.0 d	0.0 c	0.0 a	52.0 d	12.7 bc
	Impact.....topramezone	2.8	SC	0.0437 lb ai/A	POST	A						
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A						
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A						
10	Tillage						58.3 ab	38.3 b	11.3 a	6.0 a	83.7 ab	55.0 a
	Impact.....topramezone	2.8	SC	0.0875 lb ai/A	POST	A						
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A						
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A						
11	Tillage						16.0 ef	8.0 d	0.0 c	0.0 a	14.3 ef	10.0 bc
	Impact.....topramezone	2.8	SC	0.0219 lb ai/A	POST	A						
	Atrazine 4L	4	L	0.5 lb ai/A	POST	A						
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A						
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A						
12	Tillage						33.3 cde	15.0 cd	2.7 c	4.0 a	50.0 d	19.3 bc
	Impact.....topramezone	2.8	SC	0.0437 lb ai/A	POST	A						
	Atrazine 4L	4	L	1 lb ai/A	POST	A						
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A						
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A						
LSD (P=.05)							20.84	15.25	5.12	8.24	18.56	21.00
Standard Deviation							12.30	9.01	3.02	4.85	10.96	12.40
CV							42.63	60.04	119.66	284.6	27.49	59.85
Replicate F							1.119	1.376	5.286	0.405	4.087	0.453
Replicate Prob(F)							0.3446	0.2735	0.0133	0.6723	0.0310	0.6415
Treatment F							9.500	10.184	4.739	0.587	26.398	10.228
Treatment Prob(F)							0.0001	0.0001	0.0009	0.8181	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						CUMSA	CUMSA	PHSVN	PHSVN	PHSVN	
Crop Code						Cucumber	Cucumber	Snap	Snap	Snap	
Weed or Crop Name						Expeditn	Expeditn	Envy	Slendrp	Envy	
Weed or Crop Name						Injury	Yield	Injury	Injury	gaps-row	
Rating Data Type						%	lb/A	%	%	ft	
Rating Unit						08/01/11	08/05/11	08/19/11	08/19/11	08/19/11	
Rating Date											
Trt	Treatment	Form	Form	Rate	Grow	Appl					
No.	Name	Conc	Type	Rate	Stg	Code					
1	No-Tillage Untreated Check						0.0 a	5994 a	0.0 e	0.0 f	1.83 e
2	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0219 lb ai/A 1.25 % v/v 1.25 % v/v	POST POST POST	A A A	0.0 a	6215 a	15.0 de	4.0 ef	1.67 e
3	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0437 lb ai/A 1.25 % v/v 1.25 % v/v	POST POST POST	A A A	0.0 a	6540 a	69.3 ab	29.3 c	12.00 b
4	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0875 lb ai/A 1.25 % v/v 1.25 % v/v	POST POST POST	A A A	2.7 a	9432 a	96.7 a	84.0 a	23.67 a
5	No-Tillage Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 4 L 100 L 100 L		0.0219 lb ai/A 0.5 lb ai/A 1.25 % v/v 1.25 % v/v	POST POST POST POST	A A A A	0.0 a	6795 a	30.0 cd	8.3 ef	4.50 cde
6	No-Tillage Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 4 L 100 L 100 L		0.0437 lb ai/A 1 lb ai/A 1.25 % v/v 1.25 % v/v	POST POST POST POST	A A A A	0.0 a	8282 a	58.7 bc	13.3 c-f	10.17 bcd
7	Tillage Untreated Check						0.0 a	3764 a	0.0 e	0.0 f	3.67 de
8	Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0219 lb ai/A 1.25 % v/v 1.25 % v/v	POST POST POST	A A A	0.0 a	4310 a	35.3 cd	11.7 def	6.00 b-e

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						CUMSA	CUMSA	PHSVN	PHSVN	PHSVN	
Crop Code						Cucumber	Cucumber	Snap	Snap	Snap	
Weed or Crop Name						Expeditn	Expeditn	Envy	Slendrpk	Envy	
Weed or Crop Name						Injury	Yield	Injury	Injury	gaps-row	
Rating Data Type						%	lb/A	%	%	ft	
Rating Unit						08/01/11	08/05/11	08/19/11	08/19/11	08/19/11	
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code					
9	Tillage						2.7 a	4821 a	56.7 bc	17.3 cde	6.17 b-e
	Impact.....topramezone	2.8	SC	0.0437 lb ai/A	POST	A					
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A					
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A					
10	Tillage						8.7 a	4948 a	71.7 ab	59.3 b	22.67 a
	Impact.....topramezone	2.8	SC	0.0875 lb ai/A	POST	A					
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A					
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A					
11	Tillage						0.0 a	4879 a	21.7 de	11.0 def	3.00 de
	Impact.....topramezone	2.8	SC	0.0219 lb ai/A	POST	A					
	Atrazine 4L	4	L	0.5 lb ai/A	POST	A					
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A					
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A					
12	Tillage						0.0 a	5913 a	67.7 b	25.0 cd	11.83 bc
	Impact.....topramezone	2.8	SC	0.0437 lb ai/A	POST	A					
	Atrazine 4L	4	L	1 lb ai/A	POST	A					
	Crop Oil Concentrate	100	L	1.25 % v/v	POST	A					
	30% Urea Ammonium Nitrate	100	L	1.25 % v/v	POST	A					
LSD (P=.05)						5.63	3880.9	28.68	16.32	7.455	
Standard Deviation						3.33	2291.7	16.93	9.64	4.402	
CV						285.06	38.25	38.88	43.92	49.29	
Replicate F						0.211	5.609	1.140	0.345	1.626	
Replicate Prob(F)						0.8114	0.0108	0.3379	0.7122	0.2195	
Treatment F						1.800	1.536	10.078	20.854	8.826	
Treatment Prob(F)						0.1159	0.1884	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						PHSVN	PHSVN	PHSVN	PHSLU	PHSLU		
Crop Code						Snap	Snap	Snap	Lima	Lima		
Weed or Crop Name						Slendrp	Envy	Slendrp	Cypress	Cypress		
Weed or Crop Name						gaps-row	Yield	Yield	Injury	gaps-row		
Rating Data Type						ft	lb/A	lb/A	%	ft		
Rating Unit						08/19/11	08/22/11	08/22/11	09/12/11	09/13/11		
Rating Date												
Trt	Treatment	Form	Form	Rate	Grow	Appl						
No.	Name	Conc	Type	Rate	Unit	Stg	Code					
1	No-Tillage Untreated Check							1.17 c	1183 a	1001 ab	0.0 a	0.00 a
2	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0219 lb ai/A 1.25 % v/v 1.25 % v/v	POST A POST A POST A			1.33 c	839 ab	1201 a	0.0 a	0.17 a
3	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0437 lb ai/A 1.25 % v/v 1.25 % v/v	POST A POST A POST A			3.00 c	56 c	623 bc	0.0 a	4.00 a
4	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0875 lb ai/A 1.25 % v/v 1.25 % v/v	POST A POST A POST A			15.17 a	14 c	67 d	2.3 a	0.17 a
5	No-Tillage Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 4 L 100 L 100 L		0.0219 lb ai/A 0.5 lb ai/A 1.25 % v/v 1.25 % v/v	POST A POST A POST A POST A			1.83 c	820 ab	804 abc	3.3 a	0.00 a
6	No-Tillage Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 4 L 100 L 100 L		0.0437 lb ai/A 1 lb ai/A 1.25 % v/v 1.25 % v/v	POST A POST A POST A POST A			1.33 c	267 c	908 ab	2.3 a	0.00 a
7	Tillage Untreated Check							2.50 c	1025 ab	706 bc	0.0 a	0.00 a
8	Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0219 lb ai/A 1.25 % v/v 1.25 % v/v	POST A POST A POST A			2.17 c	734 b	867 abc	2.3 a	0.33 a

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						PHSVN	PHSVN	PHSVN	PHSLU	PHSLU	
Crop Code						Snap	Snap	Snap	Lima	Lima	
Weed or Crop Name						Slendrpk	Envy	Slendrpk	Cypress	Cypress	
Weed or Crop Name						gaps-row	Yield	Yield	Injury	gaps-row	
Rating Data Type						ft	lb/A	lb/A	%	ft	
Rating Unit						08/19/11	08/22/11	08/22/11	09/12/11	09/13/11	
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code					
9	Tillage						2.33 c	265 c	887 ab	2.3 a	0.00 a
	Impact.....topramezone	2.8	SC	0.0437 lb ai/A	POST	A					
	Crop Oil Concentrate	100L		1.25 % v/v	POST	A					
	30% Urea Ammonium Nitrate	100L		1.25 % v/v	POST	A					
10	Tillage						8.67 b	0 c	472 cd	4.0 a	0.17 a
	Impact.....topramezone	2.8	SC	0.0875 lb ai/A	POST	A					
	Crop Oil Concentrate	100L		1.25 % v/v	POST	A					
	30% Urea Ammonium Nitrate	100L		1.25 % v/v	POST	A					
11	Tillage						3.00 c	915 ab	887 ab	0.0 a	0.33 a
	Impact.....topramezone	2.8	SC	0.0219 lb ai/A	POST	A					
	Atrazine 4L	4L		0.5 lb ai/A	POST	A					
	Crop Oil Concentrate	100L		1.25 % v/v	POST	A					
	30% Urea Ammonium Nitrate	100L		1.25 % v/v	POST	A					
12	Tillage						3.00 c	184 c	625 bc	2.7 a	0.17 a
	Impact.....topramezone	2.8	SC	0.0437 lb ai/A	POST	A					
	Atrazine 4L	4L		1 lb ai/A	POST	A					
	Crop Oil Concentrate	100L		1.25 % v/v	POST	A					
	30% Urea Ammonium Nitrate	100L		1.25 % v/v	POST	A					
LSD (P=.05)						5.578	414.4	405.0	6.42	3.455	
Standard Deviation						3.294	244.7	239.2	3.78	2.040	
CV						86.87	46.61	31.72	234.51	459.04	
Replicate F						0.284	0.261	0.266	1.269	0.772	
Replicate Prob(F)						0.7553	0.7729	0.7687	0.3019	0.4740	
Treatment F						4.633	9.433	4.401	0.475	0.915	
Treatment Prob(F)						0.0011	0.0001	0.0015	0.8985	0.5431	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							PHSLU	PHSLU	PHSLU	
Crop Code							Lima	Lima	Lima	
Weed or Crop Name							Cypress	Cypress	Cypress	
Weed or Crop Name							Yield	Yield	density	
Rating Data Type							pods/kg	lb/A	podsleft	
Rating Unit							09/13/11	09/13/11	09/14/11	
Rating Date										
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Code			
1	No-Tillage Untreated Check							1.2497 abc	397 a	1.7 a
2	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0219 lb ai/A 1.25 % v/v 1.25 % v/v	POST A A			1.4663 a	537 a	1.7 a
3	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0437 lb ai/A 1.25 % v/v 1.25 % v/v	POST A A			1.3327 ab	454 a	0.8 a
4	No-Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0875 lb ai/A 1.25 % v/v 1.25 % v/v	POST A A			1.3203 ab	462 a	1.7 a
5	No-Tillage Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 4 L 100 L 100 L		0.0219 lb ai/A 0.5 lb ai/A 1.25 % v/v 1.25 % v/v	POST A A A			0.7910 bcd	251 a	1.3 a
6	No-Tillage Impact.....topramezone Atrazine 4L Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 4 L 100 L 100 L		0.0437 lb ai/A 1 lb ai/A 1.25 % v/v 1.25 % v/v	POST A A A			0.9937 a-d	244 a	1.0 a
7	Tillage Untreated Check							0.6503 cd	270 a	1.7 a
8	Tillage Impact.....topramezone Crop Oil Concentrate 30% Urea Ammonium Nitrate	2.8 SC 100 L 100 L		0.0219 lb ai/A 1.25 % v/v 1.25 % v/v	POST A A			0.4430 d	170 a	1.3 a

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						PHSLU	PHSLU	PHSLU
Crop Code						Lima	Lima	Lima
Weed or Crop Name						Cypress	Cypress	Cypress
Weed or Crop Name						Yield	Yield	density
Rating Data Type						pods/kg	lb/A	podsleft
Rating Unit						09/13/11	09/13/11	09/14/11
Rating Date								
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Code	
9	Tillage							
	Impact.....topramezone	2.8	SC	0.0437	lb ai/A	POST	A	0.7473 bcd
	Crop Oil Concentrate	100	L	1.25	% v/v	POST	A	282 a
	30% Urea Ammonium Nitrate	100	L	1.25	% v/v	POST	A	1.3 a
10	Tillage							
	Impact.....topramezone	2.8	SC	0.0875	lb ai/A	POST	A	0.6450 cd
	Crop Oil Concentrate	100	L	1.25	% v/v	POST	A	258 a
	30% Urea Ammonium Nitrate	100	L	1.25	% v/v	POST	A	1.7 a
11	Tillage							
	Impact.....topramezone	2.8	SC	0.0219	lb ai/A	POST	A	0.5360 d
	Atrazine 4L	4	L	0.5	lb ai/A	POST	A	180 a
	Crop Oil Concentrate	100	L	1.25	% v/v	POST	A	1.0 a
	30% Urea Ammonium Nitrate	100	L	1.25	% v/v	POST	A	
12	Tillage							
	Impact.....topramezone	2.8	SC	0.0437	lb ai/A	POST	A	0.4823 d
	Atrazine 4L	4	L	1	lb ai/A	POST	A	132 a
	Crop Oil Concentrate	100	L	1.25	% v/v	POST	A	1.3 a
	30% Urea Ammonium Nitrate	100	L	1.25	% v/v	POST	A	
LSD (P=.05)						0.64744	285.1	0.65
Standard Deviation						0.38233	168.3	0.38
CV						43.05	55.55	27.7
Replicate F						2.439	8.516	11.225
Replicate Prob(F)						0.1104	0.0018	0.0005
Treatment F						2.784	1.765	2.000
Treatment Prob(F)						0.0197	0.1236	0.0829

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code										
Crop Code		PHSVN	PHSVN	PHSLU	PHSLU	PHSLU	PHSLU	PHSLU		
Weed or Crop Name		Snap	Snap	Lima	Lima	Lima	Lima	Lima		
Weed or Crop Name		Envy	Slendrp	Cypress	Cypress	Cypress	Cypress	Cypress		
Rating Data Type		Yield	Yield	Injury	gaps-row	Yield	Yield	density		
Rating Unit		lb/A	lb/A	%	ft	pods/kg	lb/A	pods/left		
Rating Date		08/22/11	08/22/11	09/12/11	09/13/11	09/13/11	09/13/11	09/14/11		
Trt	Treatment									
No.	Name	Rate	Unit							
1	No-Tillage			839	1201	0.0	0.17	1.4663	537	1.7
2	Impact.....topramezone	0.0219	lb ai/A							
2	Crop Oil Concentrate	1.25	% v/v							
2	30% Urea Ammonium Nitrate	1.25	% v/v							
2	Tillage			734	867	2.3	0.33	0.4430	170	1.3
2	Impact.....topramezone	0.0219	lb ai/A							
2	Crop Oil Concentrate	1.25	% v/v							
2	30% Urea Ammonium Nitrate	1.25	% v/v							
1	No-Tillage			56	623	0.0	4.00	1.3327	454	0.8
3	Impact.....topramezone	0.0437	lb ai/A							
3	Crop Oil Concentrate	1.25	% v/v							
3	30% Urea Ammonium Nitrate	1.25	% v/v							
2	Tillage			265	887	2.3	0.00	0.7473	282	1.3
3	Impact.....topramezone	0.0437	lb ai/A							
3	Crop Oil Concentrate	1.25	% v/v							
3	30% Urea Ammonium Nitrate	1.25	% v/v							
1	No-Tillage			14	67	2.3	0.17	1.3203	462	1.7
4	Impact.....topramezone	0.0875	lb ai/A							
4	Crop Oil Concentrate	1.25	% v/v							
4	30% Urea Ammonium Nitrate	1.25	% v/v							
2	Tillage			0	472	4.0	0.17	0.6450	258	1.7
4	Impact.....topramezone	0.0875	lb ai/A							
4	Crop Oil Concentrate	1.25	% v/v							
4	30% Urea Ammonium Nitrate	1.25	% v/v							
1	No-Tillage			820	804	3.3	0.00	0.7910	251	1.3
5	Impact.....topramezone	0.0219	lb ai/A							
5	Atrazine 4L	0.5	lb ai/A							
5	Crop Oil Concentrate	1.25	% v/v							
5	30% Urea Ammonium Nitrate	1.25	% v/v							
2	Tillage			915	887	0.0	0.33	0.5360	180	1.0
5	Impact.....topramezone	0.0219	lb ai/A							
5	Atrazine 4L	0.5	lb ai/A							
5	Crop Oil Concentrate	1.25	% v/v							
5	30% Urea Ammonium Nitrate	1.25	% v/v							
1	No-Tillage			267	908	2.3	0.00	0.9937	244	1.0
6	Impact.....topramezone	0.0437	lb ai/A							
6	Atrazine 4L	1	lb ai/A							
6	Crop Oil Concentrate	1.25	% v/v							
6	30% Urea Ammonium Nitrate	1.25	% v/v							
2	Tillage			184	625	2.7	0.17	0.4823	132	1.3
6	Impact.....topramezone	0.0437	lb ai/A							
6	Atrazine 4L	1	lb ai/A							
6	Crop Oil Concentrate	1.25	% v/v							
6	30% Urea Ammonium Nitrate	1.25	% v/v							

Impact Carryover to Double-Cropped Vegetables

Trial ID: SCRN3-11 Cooperator: PA Vegetable Growers

Location: Field #18 Investigator: Mark VanGessel

FACTORIAL/POOLED ERROR AOV For AMASS Pigweed Species Control % 06/03/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	69606.305556				
R	2	26.055556	13.027778	2.217	0.1327	2.1
A	1	47596.694444	47596.694444	8099.825	0.0001	1.7
B	5	10927.138889	2185.427778	371.908	0.0001	2.9
AB	5	10927.138889	2185.427778	371.908	0.0001	4.1
ERROR	22	129.277778	5.876263			

FACTORIAL/POOLED ERROR AOV For IPOSS Mornjly Species Control % 06/03/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	45956.888889				
R	2	16.888889	8.444444	2.588	0.0978	1.5
A	1	27335.111111	27335.111111	8378.255	0.0001	1.2
B	5	9266.555556	1853.311111	568.043	0.0001	2.2
AB	5	9266.555556	1853.311111	568.043	0.0001	3.1
ERROR	22	71.777778	3.262626			

FACTORIAL/POOLED ERROR AOV For PHSLU Lima Cypress Injury % 07/12/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	1092.270152				
R	2	57.306129	28.653065	2.252	0.1289	3.0
A	1	0.199782	0.199782	0.016	0.9014	2.5
B	5	716.716083	143.343217	11.267	0.0001	4.3
AB	5	38.165577	7.633115	0.600	0.7004	6.0
ERROR	22	279.882581	12.721935			

FACTORIAL/POOLED ERROR AOV For PHSLU Snap Envy Injury % 07/12/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	12526.222222				
R	2	78.722222	39.361111	0.496	0.6157	7.5
A	1	18.777778	18.777778	0.237	0.6315	6.2
B	5	10433.222222	2086.644444	26.283	0.0001	10.7
AB	5	248.888889	49.777778	0.627	0.6810	15.1
ERROR	22	1746.611111	79.391414			

FACTORIAL/POOLED ERROR AOV For PHSVN Snap SlendrpK Injury % 07/12/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	5917.555556				
R	2	17.388889	8.694444	0.169	0.8454	6.1
A	1	0.444444	0.444444	0.009	0.9267	5.0
B	5	4572.555556	914.511111	17.806	0.0001	8.6
AB	5	197.222222	39.444444	0.768	0.5828	12.1
ERROR	22	1129.944444	51.361111			

FACTORIAL/POOLED ERROR AOV For CUMSA Cucumber Expeditn Injury % 07/12/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	302.222222				
R	2	4.222222	2.111111	0.517	0.6032	1.7
A	1	0.444444	0.444444	0.109	0.7445	1.4
B	5	203.888889	40.777778	9.993	0.0001	2.4
AB	5	3.888889	0.777778	0.191	0.9630	3.4
ERROR	22	89.777778	4.080808			

FACTORIAL/POOLED ERROR AOV For PHSLU Lima Cypress StandCt #/25'row 07/13/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	4477.000000				
R	2	290.666667	145.333333	1.085	0.3554	9.8
A	1	100.000000	100.000000	0.746	0.3970	8.0
B	5	695.333333	139.066667	1.038	0.4204	13.9
AB	5	443.000000	88.600000	0.661	0.6566	19.6
ERROR	22	2948.000000	134.000000			

FACTORIAL/POOLED ERROR AOV For PHSVN Snap Envy StandCt #/25'row 07/13/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	1054.972222				
R	2	41.722222	20.861111	0.544	0.5883	5.2
A	1	4.694444	4.694444	0.122	0.7299	4.3
B	5	35.138889	7.027778	0.183	0.9660	7.4
AB	5	129.138889	25.827778	0.673	0.6482	10.5
ERROR	22	844.277778	38.376263			

FACTORIAL/POOLED ERROR AOV For PHSVN Snap SlendrpK StandCt #/25'row 07/13/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	665.555556				
R	2	44.055556	22.027778	1.127	0.3420	3.7
A	1	21.777778	21.777778	1.114	0.3026	3.1
B	5	84.888889	16.977778	0.869	0.5177	5.3
AB	5	84.888889	16.977778	0.869	0.5177	7.5
ERROR	22	429.944444	19.542929			

FACTORIAL/POOLED ERROR AOV For CUMSA Cucumber Expeditn StandCt #/25'row 07/13/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	1355.888889				
R	2	182.388889	91.194444	3.124	0.0640	4.6
A	1	0.111111	0.111111	0.004	0.9514	3.7
B	5	251.222222	50.244444	1.721	0.1716	6.5
AB	5	279.888889	55.977778	1.917	0.1322	9.1
ERROR	22	642.277778	29.194444			

FACTORIAL/POOLED ERROR AOV For PHSLU Lima Cypress Injury % 07/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	998.464334				
R	2	11.818526	5.909263	1.148	0.3356	1.9
A	1	0.137798	0.137798	0.027	0.8715	1.6
B	5	869.754624	173.950925	33.793	0.0001	2.7
AB	5	3.507174	0.701435	0.136	0.9821	3.8
ERROR	22	113.246212	5.147555			

FACTORIAL/POOLED ERROR AOV For PHSVN Snap Envy Injury % 07/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	19490.305556				
R	2	338.722222	169.361111	1.119	0.3446	10.4
A	1	506.250000	506.250000	3.344	0.0810	8.5
B	5	14550.472222	2910.094444	19.222	0.0001	14.7
AB	5	764.250000	152.850000	1.010	0.4355	20.8
ERROR	22	3330.611111	151.391414			

FACTORIAL/POOLED ERROR AOV For PHSVN Snap SlendrpK Injury % 07/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	11092.000000				
R	2	223.166667	111.583333	1.376	0.2735	7.6
A	1	215.111111	215.111111	2.652	0.1176	6.2
B	5	8306.666667	1661.333333	20.485	0.0001	10.8
AB	5	562.888889	112.577778	1.388	0.2671	15.2
ERROR	22	1784.166667	81.098485			

FACTORIAL/POOLED ERROR AOV For CUMSA Cucumber Expeditn Injury % 07/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	774.972222				
R	2	96.722222	48.361111	5.286	0.0133	2.6
A	1	14.694444	14.694444	1.606	0.2183	2.1
B	5	395.472222	79.094444	8.645	0.0001	3.6
AB	5	66.805556	13.361111	1.460	0.2428	5.1
ERROR	22	201.277778	9.148990			

FACTORIAL/POOLED ERROR AOV For PHSLU Lima Cypress Injury % 08/01/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	665.262403				
R	2	19.042699	9.521350	0.424	0.6597	4.0
A	1	9.647613	9.647613	0.429	0.5190	3.3
B	5	123.712815	24.742563	1.101	0.3878	5.7
AB	5	18.662305	3.732461	0.166	0.9724	8.0
ERROR	22	494.196971	22.463499			

FACTORIAL/POOLED ERROR AOV For PHSVN Snap Envy Injury % 08/01/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	38492.305556				
R	2	981.555556	490.777778	4.087	0.0310	9.3
A	1	272.250000	272.250000	2.267	0.1464	7.6
B	5	33904.472222	6780.894444	56.469	0.0001	13.1
AB	5	692.250000	138.450000	1.153	0.3631	18.6
ERROR	22	2641.777778	120.080808			

FACTORIAL/POOLED ERROR AOV For PHSVN Snap SlendrpK Injury % 08/01/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	20829.222222				
R	2	139.388889	69.694444	0.453	0.6415	10.5
A	1	256.000000	256.000000	1.664	0.2104	8.6
B	5	16143.222222	3228.644444	20.990	0.0001	14.9
AB	5	906.666667	181.333333	1.179	0.3511	21.0
ERROR	22	3383.944444	153.815657			

FACTORIAL/POOLED ERROR AOV For CUMSA Cucumber Expeditn Injury % 08/01/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	467.000000				
R	2	4.666667	2.333333	0.211	0.8114	2.8
A	1	18.777778	18.777778	1.698	0.2061	2.3
B	5	154.333333	30.866667	2.791	0.0424	4.0
AB	5	45.888889	9.177778	0.830	0.5423	5.6
ERROR	22	243.333333	11.060606			

FACTORIAL/POOLED ERROR AOV For CUMSA Cucumber Expeditn Yield lb/A 08/05/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	263201431.776205				
R	2	58919655.880228	29459827.940114	5.609	0.0108	1940
A	1	53469314.261204	53469314.261204	10.181	0.0042	1584
B	5	27307313.575632	5461462.715126	1.040	0.4193	2744
AB	5	7958411.244138	1591682.248828	0.303	0.9058	3881
ERROR	22	115546736.815003	5252124.400682			

FACTORIAL/POOLED ERROR AOV For PHSVN Snap Envy Injury % 08/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	38754.888889				
R	2	654.055556	327.027778	1.140	0.3379	14.3
A	1	69.444444	69.444444	0.242	0.6275	11.7
B	5	29767.555556	5953.511111	20.759	0.0001	20.3
AB	5	1954.555556	390.911111	1.363	0.2761	28.7
ERROR	22	6309.277778	286.785354			

FACTORIAL/POOLED ERROR AOV For PHSVN Snap SlendrpK Injury % 08/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	23419.888889				
R	2	64.055556	32.027778	0.345	0.7122	8.2
A	1	53.777778	53.777778	0.579	0.4548	6.7
B	5	19880.222222	3976.044444	42.796	0.0001	11.5
AB	5	1377.888889	275.577778	2.966	0.0340	16.3
ERROR	22	2043.944444	92.906566			

FACTORIAL/POOLED ERROR AOV For PHSVN Snap Envy gaps-row ft 08/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	2370.576389				
R	2	63.013889	31.506944	1.626	0.2195	3.73
A	1	0.062500	0.062500	0.003	0.9552	3.04
B	5	1787.951389	357.590278	18.453	0.0001	5.27
AB	5	93.229167	18.645833	0.962	0.4620	7.45
ERROR	22	426.319444	19.378157			

FACTORIAL/POOLED ERROR AOV For PHSVN Snap SlendrpK gaps-row ft 08/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	797.687500				
R	2	6.166667	3.083333	0.284	0.7553	2.79
A	1	1.173611	1.173611	0.108	0.7453	2.28
B	5	478.895833	95.779167	8.829	0.0001	3.94
AB	5	72.784722	14.556944	1.342	0.2839	5.58
ERROR	22	238.666667	10.848485			

FACTORIAL/POOLED ERROR AOV For PHSVN Snap Envy Yield lb/A 08/22/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	7562108.688489				
R	2	31217.700606	15608.850303	0.261	0.7729	207
A	1	777.199099	777.199099	0.013	0.9103	169
B	5	6069729.371793	1213945.874359	20.273	0.0001	293
AB	5	143022.008423	28604.401685	0.478	0.7890	414
ERROR	22	1317362.408569	59880.109480			

FACTORIAL/POOLED ERROR AOV For PHSVN Snap SlendrpK Yield lb/A 08/22/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	4058062.692191				
R	2	30451.300480	15225.650240	0.266	0.7687	203
A	1	6424.120992	6424.120992	0.112	0.7407	165
B	5	1989392.659601	397878.531920	6.956	0.0005	286
AB	5	773347.746178	154669.549236	2.704	0.0474	405
ERROR	22	1258446.864940	57202.130225			

FACTORIAL/POOLED ERROR AOV For PHSLU Lima Cypress Injury % 09/12/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	410.555556				
R	2	36.222222	18.111111	1.329	0.2851	3.1
A	1	2.777778	2.777778	0.204	0.6560	2.6
B	5	37.222222	7.444444	0.546	0.7393	4.4
AB	5	34.555556	6.911111	0.507	0.7677	6.3
ERROR	22	299.777778	13.626263			

FACTORIAL/POOLED ERROR AOV For PHSLU Lima Cypress gaps-row ft 09/13/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	139.888889				
R	2	6.430556	3.215278	0.772	0.4740	1.73
A	1	2.777778	2.777778	0.667	0.4227	1.41
B	5	17.638889	3.527778	0.848	0.5310	2.44
AB	5	21.472222	4.294444	1.032	0.4236	3.45
ERROR	22	91.569444	4.162247			

FACTORIAL/POOLED ERROR AOV For PHSLU Lima Cypress Yield pods/kg 09/13/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	8.405896				
R	2	0.713168	0.356584	2.439	0.1104	0.3237
A	1	3.330017	3.330017	22.781	0.0001	0.2643
B	5	0.679526	0.135905	0.930	0.4808	0.4578
AB	5	0.467366	0.093473	0.639	0.6720	0.6474
ERROR	22	3.215819	0.146174			

FACTORIAL/POOLED ERROR AOV For PHSLU Lima Cypress Yield lb/A 09/13/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	1656356.694514				
R	2	482659.369287	241329.684643	8.516	0.0018	143
A	1	277791.683427	277791.683427	9.803	0.0049	116
B	5	190129.444573	38025.888915	1.342	0.2839	202
AB	5	82347.673341	16469.534668	0.581	0.7140	285
ERROR	22	623428.523885	28337.660177			

FACTORIAL/POOLED ERROR AOV For PHSLU Lima Cypress density pods/left 09/14/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	35	9.444215				
R	2	3.239670	1.619835	11.760	0.0003	0.3
A	1	0.011249	0.011249	0.082	0.7777	0.3
B	5	2.227961	0.445592	3.235	0.0244	0.4
AB	5	0.935032	0.187006	1.358	0.2780	0.6
ERROR	22	3.030303	0.137741			

Influence of Additives on Sweet Corn Injury

Trial ID: SCRN4-11 Cooperator:
 Location: Field #18 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Sweet Corn **ZEAMS** **Variety:** BC0805
Planting Date: 07/13/11 **Planting Method:** Row- Unit Planter **Depth:** 0.75 in
Rate: 24000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Firm/Trashy
Soil Temperature: 86 F **Soil Moisture:** Moist **Emergence Date:** 07/19/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	07/13/11	Roundup WeatherMax	4.5	AS	44	fl oz/A
2.	07/13/11	Lexar	3.7	F	3	qt/A

SOIL DESCRIPTION

% Sand: 81 **% OM:** 1.3 **Texture:** loamy sand
% Silt: 12 **pH:** 5.7 **Soil Name:** Pepperbox Loamy sand
% Clay: 7 **CEC:** 4.6 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.4 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	07/29/11
Time of Day:	11:15 am
Application Method:	Spray
Application Timing:	Post
Applic. Placement:	Brdcst
Air Temp., Unit:	92 F
% Relative Humidity:	61
Wind Velocity, Unit:	2 mph
Wind Direction:	Northwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	90 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	20

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code:	ZEAMS
Growth Stage:	V4
Height, Unit:	8 in
Crop Health:	Good

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	25 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

8-8-2011 No stunting was observed in any treatments.

Influence of Additives on Sweet Corn Injury							ZEAMS
Trial ID: SCRN4-11 Cooperator:							Sweet
Location: Field #18 Investigator: Mark VanGessel							Corn
Crop Code							Chloross
Weed or Crop Name							%
Weed or Crop Name							08/01/11
Rating Data Type							
Rating Unit							
Rating Date							
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code
1	Untreated Check						0.0h
2	Aim.....carfentrazone	2EW		0.0125 lb ai/A		POST A	5.0efg
	Nonionic Surfactant	100L		0.5% v/v		POST A	
3	Aim.....carfentrazone	2EW		0.0125 lb ai/A		POST A	8.0d
	Crop Oil Concentrate	100L		1% v/v		POST A	
4	Aim.....carfentrazone	2EW		0.0125 lb ai/A		POST A	5.3ef
	LI-700	100L		0.25% v/v		POST A	
5	Aim.....carfentrazone	2EW		0.0125 lb ai/A		POST A	11.0b
	Atrazine 4L	4L		1.25 lb ai/A		POST A	
	Crop Oil Concentrate	100L		1% v/v		POST A	
6	Aim.....carfentrazone	2EW		0.0125 lb ai/A		POST A	9.0cd
	Atrazine 90D	90D		1.25 lb ai/A		POST A	
	Crop Oil Concentrate	100L		1% v/v		POST A	
7	Aim.....carfentrazone	2EW		0.0125 lb ai/A		POST A	14.3a
	Basagran.....bentazon	4L		0.75 lb ai/A		POST A	
	Crop Oil Concentrate	100L		1% v/v		POST A	
8	Cadet.....fluthiacet	0.91EC		0.0064 lb ai/A		POST A	3.7g
	Nonionic Surfactant	100L		0.5% v/v		POST A	
9	Cadet.....fluthiacet	0.91EC		0.0064 lb ai/A		POST A	10.3bc
	Crop Oil Concentrate	100L		1% v/v		POST A	
10	Impact.....topramezone	2.8SC		0.0219 lb ai/A		POST A	4.0fg
	Crop Oil Concentrate	100L		1% v/v		POST A	
	30% Urea Ammonium Nitrate	100L		2% v/v		POST A	
11	Impact.....topramezone	2.8SC		0.0219 lb ai/A		POST A	6.0e
	Atrazine 4L	4L		0.5 lb ai/A		POST A	
	Crop Oil Concentrate	100L		1% v/v		POST A	
	30% Urea Ammonium Nitrate	100L		2% v/v		POST A	
12	Impact.....topramezone	2.8SC		0.0219 lb ai/A		POST A	3.7g
	Atrazine 4L	4L		1.25 lb ai/A		POST A	
	Crop Oil Concentrate	100L		1% v/v		POST A	
	30% Urea Ammonium Nitrate	100L		2% v/v		POST A	
LSD (P=.05)							1.56
Standard Deviation							0.92
CV							13.74
Replicate F							0.427
Replicate Prob(F)							0.6578
Treatment F							55.699
Treatment Prob(F)							0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Annual Ryegrass Control in Winter Wheat

Trial ID: SG1-11 Cooperator: Bayer
 Location: Field #28 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947
Investigator: Mark VanGessel

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Annual Ryegrass	LOLMU	Lolium multiflorum Lam.
2.	Knawel	SCRAN	Scleranthus annuus L.

Crop 1: Winter Wheat **TRZAW** **Variety:** Jamestown
Planting Date: 10/26/10 **Planting Method:** Drilled **Depth:** 0.75 in
Rate: 150 lb/A **Row Spacing:** 7 in **Seed Bed:** Medium
Soil Temperature: 75 F **Soil Moisture:** Moist **Emergence Date:** 11/03/10

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice
Trial Initiation Comments: Annual ryegrass was broadcast seeded at 15 lb/A on 10-16-10.

SOIL DESCRIPTION

% Sand: 81 **% OM:** 1.1 **Texture:** sandy loam
% Silt: 2 **pH:** 5.7
% Clay: 17 **CEC:** 5.7 **Fert. Level:** Medium

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.4 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	11/05/10	11/18/10
Time of Day:	2:30 pm	10:00 am
Application Method:	Spray	Spray
Application Timing:	Spike	1-2tilRG
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	54 F	52 F
% Relative Humidity:	61	57
Wind Velocity, Unit:	4 mph	3 mph
Wind Direction:	West	Northwest
Dew Presence (Y/N):	N	Y
Soil Temp., Unit:	50 F	50 F
Soil Surf. Moisture:	Moist	Moist
Root Zone Moisture:	Wet	Moist
Leaf Surf. Moisture:	Dry	Wet
% Cloud Cover:	55	60

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code:	TRZAW	TRZAW
Growth Stage:	Spike	2-leaf
Height, Unit:	1.5 in	2.7 in
Crop Health:	Good	Good

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	LOLMU	LOLMU
Growth Stage:	Spike	1-2 leaf
Height, Unit:	0.5 in	2 in
Density, Unit:	500 m2	500 m2
Weed 2 Code:	SCRAN	SCRAN
Growth Stage:	1-2 leaf	4-leaf
Height, Unit:	0.3 in	0.6 in
Density, Unit:	200 m2	200 m2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Backpack	Backpack
Operating Pressure:	31 psi	31 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	18 in	18 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	20 in	20 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	CO2	CO2

Trial Comments

11-09-10: No injury observed from the spike treatments

03/14/11 - Note: Powerflex has dead knawweed plants so it appears to be slow acting on this species.

HT	T	M	S	HS
SS570	FSG27	Truman	Chesapeake	USG3209
Sunburst	Oaks	Shirley		USG3555
Coker 9533			VA 05W - 258	

6-1-11: Ryegrass control is based on ryegrass seedheads observed.

Annual Ryegrass Control in Winter Wheat							TRZAW	LOLMU	TRZAW	CERVU	LOLMU	
Trial ID: SG1-11 Cooperator: Bayer							Winter	Annual	Winter	Mouseear	Annual	
Location: Field #28 Investigator: Mark VanGessel							Wheat	Ryegrass	Wheat	Chickwd	Ryegrass	
Weed Code							Stunting	Control	Stunting	Control	Control	
Crop Code							%	%	%	%	%	
Weed or Crop Name							12/15/10	12/15/10	03/14/11	03/14/11	03/14/11	
Weed or Crop Name												
Rating Data Type												
Rating Unit												
Rating Date												
Trt	Treatment	Form	Form	Rate	Grow	Appl						
No.	Name	Conc	Type	Rate	Unit	Stg	Code					
1	Untreated Check							0.0 b	0.0 d	0.0 b	0.0 c	0.0 b
2	Axiom Premix	68	WG	0.255 lb ai/A	Spike	A		0.0 b	87.7 a	5.7 b	97.0 a	94.7 a
3	Axiom Premix	68	WG	0.425 lb ai/A	Spike	A		8.0 a	88.3 a	20.0 a	97.0 a	94.7 a
4	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	1-2tilRG	B		2.3 b	81.0 b	7.0 b	81.7 b	97.0 a
	Nonionic Surfactant	100	L	0.5 % v/v	1-2tilRG	B						
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	1-2tilRG	B						
5	Axiom Premix	68	WG	0.255 lb ai/A	Spike	A		0.0 b	91.3 a	8.3 b	97.0 a	97.0 a
	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	1-2tilRG	B						
	Nonionic Surfactant	100	L	0.5 % v/v	1-2tilRG	B						
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	1-2tilRG	B						
6	PowerFlex.....pyroxulam	7.5	WG	0.0164 lb ai/A	1-2tilRG	B		2.3 b	73.3 c	7.0 b	97.0 a	97.0 a
	Nonionic Surfactant	100	L	0.5 % v/v	1-2tilRG	B						
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	1-2tilRG	B						
7	Axial XL.....pinoxaden	0.42	L	0.054 lb ai/A	1-2tilRG	B		2.3 b	76.7 bc	3.3 b	0.0 c	97.0 a
8	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	1-2tilRG	B		2.3 b	76.7 bc	7.3 b	97.0 a	98.0 a
	Starane Ultra...fluroxypyr	2.8	EC	0.105 lb ae/A	1-2tilRG	B						
	Nonionic Surfactant	100	L	0.5 % v/v	1-2tilRG	B						
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	1-2tilRG	B						
LSD (P=.05)							4.12	6.65	8.56	3.58	3.33	
Standard Deviation							2.35	3.80	4.89	2.04	1.90	
CV							108.65	5.28	66.66	2.88	2.26	
Replicate F							5.331	0.217	0.295	1.000	2.839	
Replicate Prob(F)							0.0190	0.8077	0.7493	0.3927	0.0923	
Treatment F							3.729	184.274	4.200	1396.343	964.040	
Treatment Prob(F)							0.0173	0.0001	0.0108	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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							SCRAN	ANTCO	CERVU	LOLMU	LAMAM
							Knawel	Mayweed	Mouseear	Annual	Henbit
							Control	Control	Control	Control	Control
							%	%	%	%	%
							03/14/11	04/15/11	04/15/11	04/15/11	04/15/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Untreated Check						0.0 d	0.0 b	0.0 b	0.0 b	0.0 b
2	Axiom Premix	68	WG	0.255 lb ai/A	Spike	A	84.3 b	95.0 a	100.0 a	95.7 a	100.0 a
3	Axiom Premix	68	WG	0.425 lb ai/A	Spike	A	92.3 a	100.0 a	100.0 a	94.7 a	100.0 a
4	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	1-2tilRG	B	66.7 c	86.7 a	93.3 a	97.0 a	100.0 a
	Nonionic Surfactant	100	L	0.5 % v/v	1-2tilRG	B					
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	1-2tilRG	B					
5	Axiom Premix	68	WG	0.255 lb ai/A	Spike	A	97.0 a	100.0 a	100.0 a	96.3 a	100.0 a
	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	1-2tilRG	B					
	Nonionic Surfactant	100	L	0.5 % v/v	1-2tilRG	B					
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	1-2tilRG	B					
6	PowerFlex.....pyroxsulam	7.5	WG	0.0164 lb ai/A	1-2tilRG	B	90.0 ab	96.7 a	96.7 a	94.7 a	100.0 a
	Nonionic Surfactant	100	L	0.5 % v/v	1-2tilRG	B					
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	1-2tilRG	B					
7	Axial XL.....pinoxaden	0.42	L	0.054 lb ai/A	1-2tilRG	B	0.0 d	0.0 b	0.0 b	97.0 a	0.0 b
8	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	1-2tilRG	B	84.3 b	95.0 a	100.0 a	97.0 a	100.0 a
	Starane Ultra...fluroxypyr	2.8	EC	0.105 lb ae/A	1-2tilRG	B					
	Nonionic Surfactant	100	L	0.5 % v/v	1-2tilRG	B					
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	1-2tilRG	B					
LSD (P=.05)							7.39	16.71	7.52	3.69	0.00
Standard Deviation							4.22	9.54	4.30	2.11	0.00
CV							6.56	13.32	5.82	2.51	0.0
Replicate F							1.834	0.869	2.032	0.968	0.000
Replicate Prob(F)							0.1961	0.4407	0.1679	0.4039	1.0000
Treatment F							278.973	65.020	337.774	780.766	0.000
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	1.0000

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Weed Code							SCRAN	LOLMU	
Crop Code							Knawel	Annual	TRZAW
Weed or Crop Name							Control	Ryegrass	Winter
Weed or Crop Name							%	Control	Wheat
Rating Data Type							%	%	Yield
Rating Unit							04/15/11	06/01/11	Bu/A
Rating Date							04/15/11	06/01/11	06/21/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code			
1	Untreated Check						0.0 d	0.0 c	46.1 c
2	Axiom Premix	68	WG	0.255 lb ai/A	Spike	A	76.7 b	90.0 b	63.4 a
3	Axiom Premix	68	WG	0.425 lb ai/A	Spike	A	85.0 ab	100.0 a	60.9 ab
4	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	1-2tilRG	B	61.7 c	85.7 b	66.5 a
	Nonionic Surfactant	100	L	0.5 % v/v	1-2tilRG	B			
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	1-2tilRG	B			
5	Axiom Premix	68	WG	0.255 lb ai/A	Spike	A	93.3 a	100.0 a	62.2 ab
	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	1-2tilRG	B			
	Nonionic Surfactant	100	L	0.5 % v/v	1-2tilRG	B			
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	1-2tilRG	B			
6	PowerFlex.....pyroxsulam	7.5	WG	0.0164 lb ai/A	1-2tilRG	B	95.0 a	99.0 a	59.9 ab
	Nonionic Surfactant	100	L	0.5 % v/v	1-2tilRG	B			
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	1-2tilRG	B			
7	Axial XL.....pinoxaden	0.42	L	0.054 lb ai/A	1-2tilRG	B	0.0 d	100.0 a	54.7 b
8	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	1-2tilRG	B	91.7 a	85.0 b	61.4 ab
	Starane Ultra...fluroxypyr	2.8	EC	0.105 lb ae/A	1-2tilRG	B			
	Nonionic Surfactant	100	L	0.5 % v/v	1-2tilRG	B			
	30% Urea Ammonium Nitrate	100	L	2.5 % v/v	1-2tilRG	B			
LSD (P=.05)							14.86	8.52	7.76
Standard Deviation							8.49	4.86	4.43
CV							13.49	5.9	7.46
Replicate F							0.058	0.372	2.247
Replicate Prob(F)							0.9440	0.6961	0.1424
Treatment F							67.694	146.243	6.113
Treatment Prob(F)							0.0001	0.0001	0.0020

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

BAS 94461H in Winter Wheat

Trial ID: SG2-11 Cooperator: BASF
 Location: Field #28 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Annual Ryegrass	LOLMU	Lolium multiflorum Lam.
2.	Knawel	SCRAN	Scleranthus annuus L.
3.	Henbit	LAMAM	Lamium amplexicaule L.

Crop 1: Winter Wheat **TRZAW** **Variety:** Jamestown
Planting Date: 10/26/10 **Planting Method:** Drilled **Depth:** 0.75 in
Rate: 150 lb/A **Row Spacing:** 7 in **Seed Bed:** Medium
Soil Temperature: 75 F **Soil Moisture:** Moist **Emergence Date:** 11/03/10

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice
Trial Initiation Comments: Annual ryegrass was broadcast seeded at 15 lb/A on 10-16-10.

SOIL DESCRIPTION

% Sand: 81 **% OM:** 1.1 **Texture:** sandy loam
% Silt: 2 **pH:** 5.7
% Clay: 17 **CEC:** 5.7 **Fert. Level:** Medium

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.4 **Unit:** mi

APPLICATION DESCRIPTION

	A	B	C
Application Date:	10/26/10	11/05/10	11/18/10
Time of Day:	2:30 pm	2:30 pm	10:00 am
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	Spike	Fall
Applic. Placement:	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	82 F	54 F	52 F
% Relative Humidity:	68	61	57
Wind Velocity, Unit:	4 mph	4 mph	3 mph
Wind Direction:	Southwest	West	Northwest
Dew Presence (Y/N):	N	N	Y
Soil Temp., Unit:	75 F	50 F	50 F
Soil Surf. Moisture:	Dry	Moist	Moist
Root Zone Moisture:	Moist	Wet	Moist
Leaf Surf. Moisture:	Dry	Dry	Wet
% Cloud Cover:	55	55	60

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code:	TRZAW	TRZAW	TRZAW
Growth Stage:		Spike	2-leaf
Height, Unit:		1.5 in	2.7 in
Crop Health:		Good	Good

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:	LOLMU	LOLMU	LOLMU
Growth Stage:		Spike	1-2 leaf
Height, Unit:		0.5 in	2 in
Density, Unit:		500 m ²	500 m ²
Weed 2 Code:	SCRAN	SCRAN	SCRAN
Growth Stage:			4-leaf
Height, Unit:			0.5 in
Density, Unit:			200 m ²
Weed 3 Code:	LAMAM	LAMAM	LAMAM
Growth Stage:			cotyledon
Height, Unit:			0.2 in
Density, Unit:			6 m ²

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	Backpack	Backpack	Backpack
Operating Pressure:	31 psi	31 psi	31 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	18 in	18 in	18 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	20 in	20 in	20 in
Ground Speed, Unit:	3 mph	3 mph	3 mph
Carrier:	water	water	water
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa
Propellant:	CO ₂	CO ₂	CO ₂

Trial Comments

11-09-10: Injury is a reduction in biomass, both stunting and stand loss

12/15/10 - 97% control unless noted

4/21/11 - All treatments provided good to excellent ryegrass control

Weeds: Knavl, henbit, chickweed species, cress species, primrose

BAS 94461H in Winter Wheat													
Trial ID: SG2-11 Cooperator: BASF													
Location: Field #28 Investigator: Mark VanGessel													
Weed Code	Crop Code	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date		TRZAW Winter Wheat Injury %	TRZAW Winter Wheat Injury %	LOLMU Annual Ryegrass Control %	TRZAW Winter Wheat Stunting %	LOLMU Annual Ryegrass Control %	SCRAN Knawel Control %	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code	11/09/10	12/15/10	12/15/10	03/15/11	03/15/11	03/15/11	
1	Untreated Check						0.0e	0.0f	100.0a	0.0i	0.0c	0.0c	
2	BAS 94461H	85	WG	0.053 lb ai/A	PRE	A	36.7d	20.0e	91.7b	16.7fg	97.0a	97.0a	
3	BAS 94461H	85	WG	0.0664 lb ai/A	PRE	A	50.0c	36.7cd	100.0a	23.3ef	97.0a	97.0a	
4	BAS 94461H	85	WG	0.106 lb ai/A	PRE	A	73.3ab	56.7b	100.0a	60.0b	96.3a	97.0a	
5	Axial XL.....pinoxaden	0.42	L	0.054 lb ai/A	Fall	C	0.0e	2.3f	75.0d	4.7hi	97.0a	0.0c	
6	BAS 94461H Sharpen.....saflufenacil	85 2.85	WG SC	0.0664 lb ai/A 0.0445 lb ai/A	PRE PRE	A A	46.7cd	23.3e	0.0e	25.0e	97.0a	97.0a	
7	BAS 94461H Axial XL.....pinoxaden	85 0.42	WG L	0.053 lb ai/A 0.054 lb ai/A	PRE Fall	A C	43.3cd	26.7de	93.3b	35.0d	97.0a	97.0a	
8	BAS 94461H Axial XL.....pinoxaden	85 0.42	WG L	0.0664 lb ai/A 0.054 lb ai/A	PRE Fall	A C	50.0c	40.0c	100.0a	43.3c	97.0a	97.0a	
9	BAS 94461H Axial XL.....pinoxaden	85 0.42	WG L	0.106 lb ai/A 0.054 lb ai/A	PRE Fall	A C	70.0b	63.3b	100.0a	63.3b	97.0a	97.0a	
10	Axiom Premix	68	WG	0.255 lb ai/A	Spike	B	0.0e	3.3f	89.0b	10.7gh	94.7ab	97.0a	
11	Dual II Magnum..s-metolachlor	7.64	E	0.955 lb ai/A	PRE	A	81.7a	85.0a	0.0e	80.0a	92.3b	63.3b	
12	Osprey.....mesosulfuron Starane Ultra...fluroxypyr Nonionic Surfactant 30% Urea Ammonium Nitrate	4.5 2.8 100 100	WG EC L L	0.0134 lb ai/A 0.105 lb ae/A 0.5 % v/v 2.5 % v/v	Fall Fall Fall Fall	C C C C	0.0e	2.3f	81.7c	9.0h	96.3a	97.0a	
LSD (P=.05)							11.27	10.26	4.81	7.39	3.62	2.82	
Standard Deviation							6.65	6.06	2.84	4.36	2.13	1.67	
CV							17.67	20.22	3.66	14.11	2.42	2.14	
Replicate F							1.240	3.507	0.891	0.513	0.920	1.000	
Replicate Prob(F)							0.3089	0.0476	0.4245	0.6059	0.4132	0.3840	
Treatment F							63.765	61.571	511.825	104.768	509.336	1534.788	
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Weed Code							TRZAW	ANNBR
Crop Code							Winter	Annual
Weed or Crop Name							Wheat	Broadlvs
Weed or Crop Name							Injury	Control
Rating Data Type							%	%
Rating Unit							04/21/11	04/21/11
Rating Date								
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code	
1	Untreated Check							0.0 g 0.0 d
2	BAS 94461H	85	WG	0.053	lb ai/A	PRE	A	10.7 ef 85.0 b
3	BAS 94461H	85	WG	0.0664	lb ai/A	PRE	A	17.3 de 85.0 b
4	BAS 94461H	85	WG	0.106	lb ai/A	PRE	A	46.7 b 94.3 a
5	Axial XL.....pinoxaden	0.42	L	0.054	lb ai/A	Fall	C	0.0 g 0.2 d
6	BAS 94461H	85	WG	0.0664	lb ai/A	PRE	A	10.7 ef 91.7 ab
	Sharpen.....saflufenacil	2.85	SC	0.0445	lb ai/A	PRE	A	
7	BAS 94461H	85	WG	0.053	lb ai/A	PRE	A	18.3 de 84.3 b
	Axial XL.....pinoxaden	0.42	L	0.054	lb ai/A	Fall	C	
8	BAS 94461H	85	WG	0.0664	lb ai/A	PRE	A	20.0 d 87.7 ab
	Axial XL.....pinoxaden	0.42	L	0.054	lb ai/A	Fall	C	
9	BAS 94461H	85	WG	0.106	lb ai/A	PRE	A	35.0 c 93.0 ab
	Axial XL.....pinoxaden	0.42	L	0.054	lb ai/A	Fall	C	
10	Axiom Premix	68	WG	0.255	lb ai/A	Spike	B	2.3 fg 87.7 ab
11	Dual II Magnum..s-metolachlor	7.64	E	0.955	lb ai/A	PRE	A	66.7 a 56.7 c
12	Osprey.....mesosulfuron	4.5	WG	0.0134	lb ai/A	Fall	C	0.0 g 95.7 a
	Starane Ultra...fluroxypyr	2.8	EC	0.105	lb ae/A	Fall	C	
	Nonionic Surfactant	100	L	0.5	% v/v	Fall	C	
	30% Urea Ammonium Nitrate	100	L	2.5	% v/v	Fall	C	
LSD (P=.05)							8.87	8.92
Standard Deviation							5.22	5.25
CV							27.53	7.32
Replicate F							2.341	1.376
Replicate Prob(F)							0.1209	0.2744
Treatment F							47.956	132.988
Treatment Prob(F)							0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Winter Wheat Tolerance to Sulfentrazone

Trial ID: SG3-11 Cooperator:
 Location: Field #30 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Knawel	SCRAN	Scleranthus annuus L.
2.	Henbit	LAMAM	Lamium amplexicaule L.
3.	Cutleaf Evening Primrose	OEOLA	Oenothera laciniata Hill
4.	Mouseear Chickweed	CERVU	Cerastium vulgatum L.

Crop 1: Winter Wheat **TRZAW** **Variety:** Jamestown
Planting Date: 10/26/10 **Planting Method:** Drilled **Depth:** 0.75 in
Rate: 150 lb/A **Row Spacing:** 7 in **Seed Bed:** Medium
Soil Temperature: 75 F **Soil Moisture:** Moist **Emergence Date:** 11/03/10

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

SOIL DESCRIPTION

% Sand: 83 **% OM:** 1.1 **Texture:** loamy sand
% Silt: 8 **pH:** 5.7
% Clay: 9 **CEC:** 4.3 **Fert. Level:** Medium

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.4 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	10/28/10	11/18/10
Time of Day:	1:20 pm	10:00 am
Application Method:	Spray	Spray
Application Timing:	PRE	1-2 lvs
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	80 F	52 F
% Relative Humidity:	52	57
Wind Velocity, Unit:	4 mph	3 mph
Wind Direction:	Southwest	Northwest
Dew Presence (Y/N):	N	Y
Soil Temp., Unit:	75 F	50 F
Soil Surf. Moisture:	Moist	Moist
Root Zone Moisture:	Wet	Moist
Leaf Surf. Moisture:	N/A	Wet
% Cloud Cover:	35	60

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code:	TRZAW	TRZAW
Growth Stage:		2-leaf
Height, Unit:		2.7 in
Crop Health:		Good

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	SCRAN	SCRAN
Growth Stage:		2-leaf
Height, Unit:		0.4 in
Density,Unit:		60 m2
Weed 2 Code:	LAMAM	LAMAM
Growth Stage:		cotyledon
Height, Unit:		0.2 in
Density,Unit:		10 m2
Weed 3 Code:	OEOLA	OEOLA
Growth Stage:		cotyledon
Height, Unit:		0.2 in
Density,Unit:		8 m2
Weed 4 Code:	CERVU	CERVU
Growth Stage:		cotyledon
Height, Unit:		0.2 in
Density,Unit:		8 m2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Backpack	Backpack
Operating Pressure:	31 psi	31 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	18 in	18 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	20 in	20 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	CO2	CO2

Trial Comments

10-09-10: Wheat is at 1-leaf stage

Winter Wheat Tolerance to Sulfentrazone													
Trial ID: SG3-11		Cooperator:											
Location: Field #30		Investigator: Mark VanGessel											
Weed Code	Crop Code	TRZAW	TRZAW	TRZAW	SCRAN	TRZAW	HLOUM						
Weed or Crop Name	Weed or Crop Name	Winter	Winter	Winter	Knawel	Winter	Jagged						
Rating Data Type	Rating Data Type	Wheat	Wheat	Wheat	Control	Wheat	Chickwd						
Rating Unit	Rating Unit	Stunting	Stunting	Injury	%	Injury	1=presnt						
Rating Date	Rating Date	%	%	%	%	%	0=absent						
Trt	Treatment	Form	Form	Rate	Grow	Appl							
No.	Name	Conc	Type	Rate	Unit	Stg	Code						
1	Untreated Check							0.0c	0.0d	0.0c	0.0e	0.0a	0.0a
2	Spartan.....sulfentrazone	4F		0.0625 lb ai/A	PRE	A		3.7 bc	5.7 cd	0.1c	40.0d	2.0a	0.3a
3	Spartan.....sulfentrazone	4F		0.094 lb ai/A	PRE	A		5.0 b	10.3 bcd	3.3c	40.0d	2.0a	0.7a
4	Spartan.....sulfentrazone	4F		0.125 lb ai/A	PRE	A		10.7 a	15.3 abc	10.7 b	46.7 d	13.1 a	1.0a
5	Valor SX.....flumioxazin	51WG		0.064 lb ai/A	PRE	A		4.0 bc	20.7 ab	11.7 b	97.0 a	12.1 a	0.0a
6	Spartan.....sulfentrazone	4F		0.0625 lb ai/A	1-2 lvs	B			24.0 a	0.0c	68.3 c	2.1a	0.7a
7	Spartan.....sulfentrazone	4F		0.094 lb ai/A	1-2 lvs	B			4.7 cd	0.0c	60.0 c	1.5a	0.7a
8	Spartan.....sulfentrazone	4F		0.125 lb ai/A	1-2 lvs	B			0.0 d	3.3c	81.7 b	0.0a	0.3a
9	Spartan Charge Premix	3.5F		0.104 lb ai/A	1-2 lvs	B			0.0 d	2.3c	87.3 ab	2.1a	0.0a
10	Authority MTZ Premix	45DF		0.155 lb ai/A	1-2 lvs	B			1.7 d	18.3 a	97.0 a	10.0 a	0.0a
LSD (P=.05)								4.63	12.76	5.98	10.68	10.27	0.73
Standard Deviation								2.46	7.44	3.47	6.23	5.65	0.43
CV								52.71	90.35	69.67	10.08	125.67	116.18
Replicate F								2.722	3.595	1.141	1.735	4.585	0.184
Replicate Prob(F)								0.1254	0.0486	0.3429	0.2046	0.0386	0.8337
Treatment F								7.355	4.360	10.127	73.655	2.457	2.224
Treatment Prob(F)								0.0087	0.0038	0.0001	0.0001	0.0888	0.0711

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Weed Code							LAMAM	SCRAN	
Crop Code							Henbit	Knawel	
Weed or Crop Name							Control	Control	
Weed or Crop Name							%	%	
Rating Data Type							04/21/11	04/21/11	
Rating Unit									
Rating Date									
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Unit	Stg	Appl Code		
1	Untreated Check							0.0 d	0.0 e
2	Spartan.....sulfentrazone	4 F		0.0625 lb ai/A	PRE	A		80.5 ab	23.3 de
3	Spartan.....sulfentrazone	4 F		0.094 lb ai/A	PRE	A		65.7 bc	56.7 bc
4	Spartan.....sulfentrazone	4 F		0.125 lb ai/A	PRE	A		56.1 c	36.7 cd
5	Valor SX.....flumioxazin	51 WG		0.064 lb ai/A	PRE	A		97.0 a	90.0 a
6	Spartan.....sulfentrazone	4 F		0.0625 lb ai/A	1-2 lvs	B		97.0 a	63.3 abc
7	Spartan.....sulfentrazone	4 F		0.094 lb ai/A	1-2 lvs	B		97.0 a	76.7 ab
8	Spartan.....sulfentrazone	4 F		0.125 lb ai/A	1-2 lvs	B		97.0 a	81.7 ab
9	Spartan Charge Premix	3.5 F		0.104 lb ai/A	1-2 lvs	B		97.0 a	66.7 ab
10	Authority MTZ Premix	45 DF		0.155 lb ai/A	1-2 lvs	B		97.0 a	83.3 ab
LSD (P=.05)							20.86	29.99	
Standard Deviation							11.99	17.48	
CV							15.29	30.23	
Replicate F							0.862	0.297	
Replicate Prob(F)							0.4421	0.7465	
Treatment F							20.600	8.398	
Treatment Prob(F)							0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

ALS-Resistant Horseweed Control in Winter Wheat

Trial ID: SG4-11 Cooperator:
 Location: Field #4 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Cutleaf Evening Primrose	OEOLA	Oenothera lacinata Hill
2.	Henbit	LAMAM	Lamium amplexicaule L.
3.	Vetch species	VICSS	Vicia Ssp.
4.	Horseweed	ERICA	Erigeron canadensis L.
5.	Jagged Chickweed	HLOUM	Holosteum umbellatum L.
6.	Field Pansy	VIORA	Viola rafinesquii Greene
7.	Whitlowgrass	ERPVE	Draba verna L.
8.	Purselane Speedwell	VERPG	Veronica peregrinia L.
9.	Mouseear Chickweed	CERVU	Cerastium vulgatum L.

Crop 1: Winter Wheat **TRZAW** **Variety:** Jamestown
Planting Date: 10/26/10 **Planting Method:** Drilled **Depth:** 0.75 in
Rate: 150 lb/A **Row Spacing:** 7 in **Seed Bed:** Firm
Soil Temperature: 75 F **Soil Moisture:** Moist **Emergence Date:** 11/02/10

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage

SOIL DESCRIPTION

% Sand: 79 **% OM:** 1.8 **Texture:** loamy sand
% Silt: 13 **pH:** 5.8
% Clay: 8 **CEC:** 7.1 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.4 **Unit:** mi

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	10/26/10	11/05/10	11/18/10	03/14/11
Time of Day:	2:30 pm	2:30 pm	11:30 am	1:00 pm
Application Method:	Spray	Spray	Spray	Spray
Application Timing:	PRE	Spike	Fall	Spring
Applic. Placement:	Brdcst	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	82 F	54 F	53 F	47 F
% Relative Humidity:	68	61	57	41
Wind Velocity, Unit:	4 mph	4 mph	3 mph	5 mph
Wind Direction:	Southwest	West	Northwest	Northwest
Dew Presence (Y/N):	N	N	N	N
Soil Temp., Unit:	75 F	50 F	50 F	44 F
Soil Surf. Moisture:	Dry	Moist	Moist	Dry
Root Zone Moisture:	Moist	Wet	Moist	Moist
Leaf Surf. Moisture:	Dry	Dry	Moist	Dry
% Cloud Cover:	55	55	90	65

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code:	TRZAW	TRZAW	TRZAW	TRZAW
Growth Stage:		Spike	2-leaf	3-5 tiller
Height, Unit:		1.5 in	2.7 in	3.5 in
Crop Health:		Good	Good	Good

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code:	OEOLA	OEOLA	OEOLA	OEOLA
Growth Stage:	2-leaf	2-3 leaf	4-leaf	rosette
Height, Unit:	0.7 in	0.8 in	1 in	2 in
Density,Unit:	40 m2	200 m2	300 m2	120 m2
Weed 2 Code:	LAMAM	LAMAM	LAMAM	LAMAM
Growth Stage:	1-2 leaf	2-leaf	4-leaf	vegetative
Height, Unit:	0.5 in	0.7	1 in	2 in
Density,Unit:	30 m2	50 1m2	100 m2	400 m2
Weed 3 Code:	VICSS	VICSS	VICSS	VICSS
Growth Stage:		2-leaf	4-leaf	
Height, Unit:		0.8 in	1.5 in	
Density,Unit:		8 m2	8 m2	
Weed 4 Code:	ERICA	ERICA	ERICA	ERICA
Growth Stage:		1 leaf	3-leaf	rosette
Height, Unit:		0.2 in	0.5 in	1 in
Density,Unit:		30 m2	60 m2	80 m2
Weed 5 Code:	HLOUM	HLOUM	HLOUM	HLOUM
Growth Stage:		1-leaf	3-leaf	ea-flower
Height, Unit:		0.4 in	1 in	2.5 in
Density,Unit:		15 m2	20 m2	40 m2
Weed 6 Code:	VIORA	VIORA	VIORA	VIORA
Growth Stage:				vegetative
Height, Unit:				1.5 in
Density,Unit:				80 m2
Weed 7 Code:	ERPVE	ERPVE	ERPVE	ERPVE
Growth Stage:				flower
Height, Unit:				2.5 in
Density,Unit:				180 m2
Weed 8 Code:	VERPG	VERPG	VERPG	VERPG
Growth Stage:				vegetative
Height, Unit:				0.8 in
Density,Unit:				180 m2
Weed 9 Code:	CERVU	CERVU	CERVU	CERVU
Growth Stage:				vegetative
Height, Unit:				1 in
Density,Unit:				120 m2

APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	Backpack	Backpack	Backpack	Backpack
Operating Pressure:	31 psi	31 psi	31 psi	31 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002	11002
Nozzle Spacing, Unit:	18 in	18 in	18 in	18 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	20 in	20 in	20 in	20 in
Ground Speed, Unit:	3 mph	3 mph	3 mph	3 mph
Carrier:	water	water	water	water
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa	20 gpa
Propellant:	CO2	CO2	CO2	CO2

Trial Comments

12/22/10 - Weeds: jagged chickweed, primerose, horseweed, common purslane, deadnettle.

4/6/11 - Weeds: henbit, cress, jagged chickweed, field pansy, horseweed, mouseear chickweed, primrose

ALS-Resistant Horseweed Control in Winter Wheat							TRZAW	TRZAW	ANNBR	TRZAW	TRZAW	TRZAW
Trial ID: SG4-11 Cooperator:							Winter	Winter	WntrAnnl	Winter	Winter	Winter
Location: Field #4 Investigator: Mark VanGessel							Wheat	Wheat	Broadlvs	Wheat	Wheat	Wheat
Weed Code							Stunting	Injury	Control	Stunting	Stunting	Yield
Crop Code							%	%	%	%	%	Bu/A
Weed or Crop Name							11/09/10	12/22/10	12/22/10	03/05/11	04/06/11	06/21/11
Weed or Crop Name												
Rating Data Type												
Rating Unit												
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code						
1	Untreated Check						0.0 d	0.0 e	0.0 f	0.0 c	0.0 c	41.5 cd
2	Metribuzin.....metribuzin	75 DF		0.047 lb ai/A	Spike	B	0.0 d	8.0 cd	91.7 a	0.0 c	0.0 c	53.3 ab
	Nonionic Surfactant	100 L		0.25 % v/v	Spike	B						
3	Metribuzin.....metribuzin	75 DF		0.094 lb ai/A	Spike	B	1.7 d	11.7 c	94.0 a	0.0 c	0.0 c	57.1 a
	Nonionic Surfactant	100 L		0.25 % v/v	Spike	B						
4	Axiom Premix	68 WG		0.255 lb ai/A	Spike	B	0.0 d	11.7 c	95.0 a	2.3 bc	0.0 c	56.2 a
	Nonionic Surfactant	100 L		0.25 % v/v	Spike	B						
5	Sharpen.....saflufenacil	2.85 SC		0.0223 lb ai/A	PRE	A	0.0 d	0.0 e	73.3 b	0.0 c	3.3 c	56.9 a
	Crop Oil Concentrate	100 L		1 % v/v	PRE	A						
	30% Urea Ammonium Nitrate	100 L		2.5 % v/v	PRE	A						
6	Sharpen.....saflufenacil	2.85 SC		0.0445 lb ai/A	PRE	A	6.3 c	0.0 e	70.0 bc	3.3 bc	0.0 c	56.9 a
	Crop Oil Concentrate	100 L		1 % v/v	PRE	A						
	30% Urea Ammonium Nitrate	100 L		2.5 % v/v	PRE	A						
7	BAS 94461H	85 WG		0.0664 lb ai/A	PRE	A	15.7 b	33.3 b	33.3 e	16.7 a	20.7 a	45.2 cd
8	Starane Ultra...fluroxypyr	2.8 EC		0.105 lb ae/A	Fall	C		1.7 e	71.7 b	0.0 c	2.3 c	52.7 ab
9	Starane Ultra...fluroxypyr	2.8 EC		0.14 lb ae/A	Fall	C		4.0 de	60.0 c	5.7 b	0.0 c	52.8 ab
10	Banvel.....dicamba	4 EC		0.125 lb ai/A	Fall	C		0.0 e	46.7 d	1.7 bc	11.7 b	41.1 d
	Nonionic Surfactant	100 L		0.25 % v/v	Fall	C						
11	Starane Ultra...fluroxypyr	2.8 EC		0.14 lb ae/A	Spring	D					4.0 c	42.3 cd
12	Banvel.....dicamba	4 EC		0.187 lb ai/A	Spring	D					18.3 a	48.1 bc
	Nonionic Surfactant	100 L		0.25 % v/v	Spring	D						
13	BAS 94461H	85 WG		0.0664 lb ai/A	PRE	A	21.7 a	40.0 a	85.0 a	18.3 a	21.7 a	47.9 bcd
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	PRE	A						
	Nonionic Surfactant	100 L		0.25 % v/v	PRE	A						
14	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	PRE	A	0.0 d	0.0 e	85.7 a	0.0 c	0.0 c	57.3 a
	Nonionic Surfactant	100 L		0.25 % v/v	PRE	A						
LSD (P=.05)							4.52	6.31	10.23	4.18	6.30	6.74
Standard Deviation							2.61	3.73	6.04	2.47	3.75	4.01
CV							51.83	40.54	8.99	61.7	64.0	7.92
Replicate F							2.174	1.550	3.926	1.478	1.310	2.731
Replicate Prob(F)							0.1462	0.2346	0.0348	0.2500	0.2877	0.0839
Treatment F							29.133	40.280	66.845	21.194	15.142	7.129
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Wheat Varietal Tolerance to Metribuzin
 Selected Varieties Based on Greenhouse Work
 Trial ID: SG5-11 Cooperator:
 Location: Field 14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Winter Wheat **TRZAW** **Variety:** Several
Planting Date: 11/03/10 **Planting Method:** Drilled- Cone System **Depth:** 0.75 in
Row Spacing: 7 in **Seed Bed:** Medium
Soil Temperature: 55 F **Soil Moisture:** Moist **Emergence Date:** 11/17/10

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 2
Site Type: Field **Study Design:** FACTORIAL

SOIL DESCRIPTION

% Sand: 79 **% OM:** 1.5 **Texture:** loamy sand
% Silt: 14 **pH:** 6.0
% Clay: 7 **CEC:** 5.2 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	11/18/10
Time of Day:	11:30 am
Application Method:	Spray
Application Timing:	fall
Applic. Placement:	Brdcst
Air Temp., Unit:	53 F
% Relative Humidity:	57
Wind Velocity, Unit:	3 mph
Wind Direction:	Northwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	50 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Moist
% Cloud Cover:	90

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code:	TRZAW
Growth Stage:	spike
Height, Unit:	0.7 in
Crop Health:	Good

APPLICATION EQUIPMENT	
	A
Appl. Equipment:	Backpack
Operating Pressure:	31 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	CO2

Wheat Varietal Tolerance to Metribuzin
 Selected Varieties Based on Greenhouse Work
 Trial ID: Cooperator:
 Location: Field 14 Investigator: Mark VanGessel

Crop Code	TRZAW	TRZAW									
Weed or Crop Name	Winter	Winter									
Weed or Crop Name	Wheat	Wheat									
Rating Data Type	Stunting	StandRed									
Rating Unit	%	%									
Rating Date	04/25/11	04/25/11									
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
1	W2 OAKES Metribuzin.....metribuzin	75	DF	0.14	lb ai/A			3.5	d		
2	W2 OAKES Metribuzin.....metribuzin	75	DF	0.56	lb ai/A			4.0	d	1.5	c
3	W2 OAKES Untreated							0.0	d	0.0	c
4	W3 Coker 9553 Metribuzin.....metribuzin	75	DF	0.14	lb ai/A			6.5	cd		
5	W3 Coker 9553 Metribuzin.....metribuzin	75	DF	0.56	lb ai/A			15.0	cd	5.0	c
6	W3 Coker 9553 Untreated							0.0	d	0.0	c
7	W7 VA 05W 258 Metribuzin.....metribuzin	75	DF	0.14	lb ai/A			10.0	cd		
8	W7 VA 05W 258 Metribuzin.....metribuzin	75	DF	0.56	lb ai/A			50.0	a	40.0	a
9	W7 VA 05W 258 Untreated							0.0	d	0.0	c
10	W10 FS 627 Metribuzin.....metribuzin	75	DF	0.14	lb ai/A			6.0	cd		
11	W10 FS 627 Metribuzin.....metribuzin	75	DF	0.56	lb ai/A			15.0	cd	7.5	c
12	W10 FS 627 Untreated							0.0	d	0.0	c
13	W14 USG 3209 Metribuzin.....metribuzin	75	DF	0.14	lb ai/A			5.0	cd		
14	W14 USG 3209 Metribuzin.....metribuzin	75	DF	0.56	lb ai/A			7.5	cd	15.0	bc
15	W14 USG 3209 Untreated							0.0	d	0.0	c
16	W18 USG 3555 Metribuzin.....metribuzin	75	DF	0.14	lb ai/A			1.5	d		

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Crop Code		TRZAW	TRZAW						
Weed or Crop Name		Winter	Winter						
Weed or Crop Name		Wheat	Wheat						
Rating Data Type		Stunting	StandRed						
Rating Unit		%	%						
Rating Date		04/25/11	04/25/11						
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Grow Stg	Appl Code		
17	W18 USG 3555	Metribuzin.....metribuzin	75 DF	0.56 lb ai/A				37.5 ab	36.5 ab
18	W18 USG 3555	Untreated						0.0 d	0.0 c
19	W22 SS 520	Metribuzin.....metribuzin	75 DF	0.14 lb ai/A				0.0 d	
20	W22 SS 520	Metribuzin.....metribuzin	75 DF	0.56 lb ai/A				11.0 cd	4.0 c
21	W22 SS 520	Untreated						0.0 d	0.0 c
22	W31 9W 10 09T 'Truman'	Metribuzin.....metribuzin	75 DF	0.14 lb ai/A				2.5 d	
23	W31 9W 10 09T 'Truman'	Metribuzin.....metribuzin	75 DF	0.56 lb ai/A				7.5 cd	5.0 c
24	W31 9W 10 09T 'Truman'	Untreated						0.0 d	0.0 c
25	W33 BF 10 BAT 'Sunburst'	Metribuzin.....metribuzin	75 DF	0.14 lb ai/A				0.0 d	
26	W33 BF 10 BAT 'Sunburst'	Metribuzin.....metribuzin	75 DF	0.56 lb ai/A				2.5 d	1.0 c
27	W33 BF 10 BAT 'Sunburst'	Untreated						0.0 d	0.0 c
28	W40 3103 'Chesapeake'	Metribuzin.....metribuzin	75 DF	0.14 lb ai/A				0.0 d	
29	W40 3103 'Chesapeake'	Metribuzin.....metribuzin	75 DF	0.56 lb ai/A				3.5 d	2.5 c
30	W40 3103 'Chesapeake'	Untreated						0.0 d	0.0 c
31	W42 SHIRLEY	Metribuzin.....metribuzin	75 DF	0.14 lb ai/A				4.0 d	
32	W42 SHIRLEY	Metribuzin.....metribuzin	75 DF	0.56 lb ai/A				25.0 bc	11.5 c
33	W42 SHIRLEY	Untreated						0.0 d	0.0 c
LSD (P=.05)								20.53	22.30
Standard Deviation								10.05	10.72
CV								152.54	182.14
Replicate F								3.601	0.997
Replicate Prob(F)								0.0668	0.3295
Treatment F								2.508	2.203
Treatment Prob(F)								0.0056	0.0387

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Speedwell Control in Winter Wehat

Trial ID: SG7-11 Cooperator:
 Location: Bonk Farm Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Speedwell Ssp.	VERSS	Veronica Ssp.

Crop 1: Winter Wheat TRZAW

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Conventional Tillage

APPLICATION DESCRIPTION

	A
Application Date:	03/18/11
Time of Day:	11:00 am
Application Method:	Spray
Application Timing:	Spring
Applic. Placement:	Brdcst
Air Temp., Unit:	63 F
% Relative Humidity:	48
Wind Velocity, Unit:	4 mph
Wind Direction:	Southwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	60 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	30

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code:	TRZAW
Growth Stage:	3-4 tiller
Height, Unit:	4 in
Crop Health:	Good

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	VERSS
Growth Stage:	vegetative
Height, Unit:	2 in
Density, Unit:	150 m2

APPLICATION EQUIPMENT	
	A
Appl. Equipment:	Backpack
Operating Pressure:	31 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	CO2

Speedwell Control in Winter Wehat							TRZAW	TRZAW	TRZAW	VERHE	POAAN
Trial ID: SG7-11 Cooperator:							Winter	Winter	Winter	Ivyleaf	Annual
Location: Bonk Farm Investigator: Mark VanGessel							Wheat	Wheat	Wheat	Speedwll	Bluegrss
Weed Code							Stunting	Chloross	Stunting	Control	Control
Crop Code							%	%	%	%	%
Weed or Crop Name							04/01/11	04/01/11	04/15/11	04/15/11	04/15/11
Weed or Crop Name											
Rating Data Type											
Rating Unit											
Rating Date											
Trt	Treatment	Form	Form	Rate	Grow	Appl					
No.	Name	Conc	Type	Rate	Stg	Code					
1	Untreated Check						0.0 d	0.0 c	0.0 d	0.0 f	0.0 c
2	Osprey.....mesosulfuron	4.5 WG		0.0134 lb ai/A	Spring	A	9.0 abc	0.0 c	7.0 a-d	55.0 b-e	65.0 a
	Nonionic Surfactant	100 L		0.25 % v/v	Spring	A					
	30% Urea Ammonium Nitrate	100 L		2 % v/v	Spring	A					
3	PowerFlex.....pyroxsulam	7.5 WG		0.0164 lb ai/A	Spring	A	8.3 bc	0.0 c	6.7 a-d	83.3 a	70.0 a
	Nonionic Surfactant	100 L		0.25 % v/v	Spring	A					
	30% Urea Ammonium Nitrate	100 L		2 % v/v	Spring	A					
4	Finesse Premix	75 DF		0.014 lb ai/A	Spring	A	11.3 ab	0.0 c	13.3 a	76.7 ab	63.3 a
	Nonionic Surfactant	100 L		0.25 % v/v	Spring	A					
	30% Urea Ammonium Nitrate	100 L		2 % v/v	Spring	A					
5	Starane Ultra...fluroxypyr	2.8 EC		0.14 lb ae/A	Spring	A	1.7 cd	0.0 c	5.0 bcd	46.7 de	0.0 c
6	Pulsar Premix	1.67 EC		0.163 lb ae/A	Spring	A	16.7 a	0.0 c	8.3 abc	33.3 e	0.0 c
7	MCPA Ester 4	3.7 EC		0.347 lb ae/A	Spring	A	10.7 ab	0.0 c	10.0 ab	50.0 cde	0.0 c
8	Aim.....carfentrazone	2 EW		0.0156 lb ai/A	Spring	A	7.3 bcd	15.7 a	3.3 bcd	6.7 f	0.0 c
	Nonionic Surfactant	100 L		0.25 % v/v	Spring	A					
9	Metribuzin.....metribuzin	75 DF		0.094 lb ai/A	Spring	A	0.0 d	12.3 b	1.7 cd	65.0 a-d	26.7 b
	Nonionic Surfactant	100 L		0.25 % v/v	Spring	A					
10	Metribuzin.....metribuzin	75 DF		0.187 lb ai/A	Spring	A	0.0 d	13.3 b	3.3 bcd	75.0 abc	58.3 a
	Nonionic Surfactant	100 L		0.25 % v/v	Spring	A					
LSD (P=.05)							7.77	2.17	7.49	25.19	25.42
Standard Deviation							4.53	1.26	4.37	14.68	14.82
CV							69.69	30.57	74.44	29.87	52.31
Replicate F							0.356	1.023	2.796	0.468	0.106
Replicate Prob(F)							0.7055	0.3794	0.0876	0.6339	0.8998
Treatment F							4.946	84.464	2.560	11.372	13.997
Treatment Prob(F)							0.0019	0.0001	0.0428	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							VERHE	POAAN
Crop Code								
Weed or Crop Name							Ivyleaf	Annual
Weed or Crop Name							Speedwll	Bluegrss
Rating Data Type							Control	Control
Rating Unit							%	%
Rating Date							05/07/11	05/07/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code	
1	Untreated Check							0.0 d 0.0 c
2	Osprey.....mesosulfuron	4.5	WG	0.0134	lb ai/A	Spring	A	43.3 c 93.3 a
	Nonionic Surfactant	100	L	0.25	% v/v	Spring	A	
	30% Urea Ammonium Nitrate	100	L	2	% v/v	Spring	A	
3	PowerFlex.....pyroxsulam	7.5	WG	0.0164	lb ai/A	Spring	A	95.0 a 81.7 a
	Nonionic Surfactant	100	L	0.25	% v/v	Spring	A	
	30% Urea Ammonium Nitrate	100	L	2	% v/v	Spring	A	
4	Finesse Premix	75	DF	0.014	lb ai/A	Spring	A	82.7 ab 0.0 c
	Nonionic Surfactant	100	L	0.25	% v/v	Spring	A	
	30% Urea Ammonium Nitrate	100	L	2	% v/v	Spring	A	
5	Starane Ultra...fluroxypyr	2.8	EC	0.14	lb ae/A	Spring	A	53.3 c 0.0 c
6	Pulsar Premix	1.67	EC	0.163	lb ae/A	Spring	A	55.0 c 0.0 c
7	MCPA Ester 4	3.7	EC	0.347	lb ae/A	Spring	A	36.7 c 0.0 c
8	Aim.....carfentrazone	2	EW	0.0156	lb ai/A	Spring	A	58.3 bc 0.0 c
	Nonionic Surfactant	100	L	0.25	% v/v	Spring	A	
9	Metribuzin.....metribuzin	75	DF	0.094	lb ai/A	Spring	A	93.3 a 30.0 b
	Nonionic Surfactant	100	L	0.25	% v/v	Spring	A	
10	Metribuzin.....metribuzin	75	DF	0.187	lb ai/A	Spring	A	95.0 a 76.0 a
	Nonionic Surfactant	100	L	0.25	% v/v	Spring	A	
LSD (P=.05)							24.33	18.65
Standard Deviation							14.18	10.87
CV							23.15	38.69
Replicate F							3.241	0.937
Replicate Prob(F)							0.0628	0.4100
Treatment F							14.170	39.931
Treatment Prob(F)							0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Roughstalk Bluegrass Control in Winter Wheat

Trial ID: SG8-11 Cooperator:
 Location: Wyatt Farm Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Ivyleaf Speedwell	VERHE	Veronica hederifolia L.
2.	Henbit	LAMAM	Lamium amplexicaule L.
3.	Roughstalk Bluegrass	POATR	Poa trivialis L.

Crop 1: Winter Wheat TRZAW

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Conventional Tillage

APPLICATION DESCRIPTION

	A
Application Date:	03/18/11
Time of Day:	1:30 pm
Application Method:	Spray
Application Timing:	Spring
Applic. Placement:	Brdcst
Air Temp., Unit:	76 F
% Relative Humidity:	41
Wind Velocity, Unit:	3 mph
Wind Direction:	Southwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	70 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	65

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code:	TRZAW
Growth Stage:	3-4 tiller
Height, Unit:	5 in
Crop Health:	Good

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	VERHE
Growth Stage:	flower
Height, Unit:	3.5 in
Density,Unit:	200 m2
Weed 2 Code:	LAMAM
Growth Stage:	flower
Height, Unit:	4 in
Density,Unit:	40 m2
Weed 3 Code:	POATR
Growth Stage:	3-5 tiller
Height, Unit:	3 in
Density,Unit:	50 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Backpack
Operating Pressure:	31 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	21 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	CO2

Trial Comments

4/6/11 - No crop response was noted from herbicide treatments.

Roughstalk Bluegrass Control in Winter Wheat							POATR	VERHE	POATR	VERHE	VIORA
Trial ID: SG8-11 Cooperator:							Roughstck	Ivyleaf	Roughstck	Ivyleaf	Field
Location: Wyatt Farm Investigator: Mark VanGessel							Bluegrss	Speedwll	Bluegrss	Speedwll	Pansy
Weed Code							Control	Control	Control	Control	Control
Weed or Crop Name							%	%	%	%	%
Weed or Crop Name							04/22/11	04/22/11	05/07/11	05/07/11	05/07/11
Rating Data Type											
Rating Unit											
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Untreated Check						0.0b	0.0c	0.0c	0.0c	0.0d
	Harmony Extra SG Premix	50	SG	0.0234 lb ai/A	Spring	A					
2	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	Spring	A	88.3a	46.7b	98.3a	56.7b	53.3b
	Nonionic Surfactant	100	L	0.25 % v/v	Spring	A					
	30% Urea Ammonium Nitrate	100	L	2 % v/v	Spring	A					
	Harmony Extra SG Premix	50	SG	0.0234 lb ai/A	Spring	A					
3	PowerFlex.....pyroxsulam	7.5	WG	0.0164 lb ai/A	Spring	A	90.0a	71.7a	83.3b	76.7a	91.3a
	Nonionic Surfactant	100	L	0.25 % v/v	Spring	A					
	30% Urea Ammonium Nitrate	100	L	2 % v/v	Spring	A					
	Harmony Extra SG Premix	50	SG	0.0234 lb ai/A	Spring	A					
4	Maverick.....sulfosulfuron	75	WG	0.0314 lb ai/A	Spring	A	88.3a	40.0b	97.0a	10.0c	30.0bc
	Nonionic Surfactant	100	L	0.25 % v/v	Spring	A					
	Harmony Extra SG Premix	50	SG	0.0234 lb ai/A	Spring	A					
5	Olympus.....propoxycarbazone	70	WG	0.0394 lb ai/A	Spring	A	90.0a	26.7b	86.0b	40.0b	43.3b
	Nonionic Surfactant	100	L	0.25 % v/v	Spring	A					
	Harmony Extra SG Premix	50	SG	0.0234 lb ai/A	Spring	A					
6	Axial XL.....pinoxaden	0.42	L	0.054 lb ai/A	Spring	A	86.7a	0.0c	94.0a	0.0c	10.0cd
	Harmony Extra SG Premix	50	SG	0.0234 lb ai/A	Spring	A					
LSD (P=.05)							3.59	24.69	6.39	18.39	27.26
Standard Deviation							1.97	13.57	3.52	10.11	14.98
CV							2.67	44.01	4.6	33.09	39.43
Replicate F							1.429	0.837	3.147	1.522	1.312
Replicate Prob(F)							0.2846	0.4612	0.0870	0.2649	0.3119
Treatment F							1012.000	12.774	349.270	30.446	14.432
Treatment Prob(F)							0.0001	0.0004	0.0001	0.0001	0.0003

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Timing of Winter Wheat Herbicide Applications

Trial ID: SG9-11 Cooperator:
 Location: Field #36 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Mouseear Chickweed	CERVU	Cerastium vulgatum L.
2.	Whitlowgrass	ERPVE	Draba verna L.
3.	Jagged Chickweed	HLOUM	Holosteum umbellatum L.
4.	Henbit	LAMAM	Lamium amplexicaule L.
5.	Mouseear Cress	ARBTH	Arabidopsis thaliana (L.) Heynh.
6.	Knawel	SCRAN	Scleranthus annuus L.
7.	Star of Bethlehem	OTGUM	Ornithogalum umbellatum L.

Crop 1: Non-Crop

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** FACTORIAL
Tillage Type: No Tillage/Soybean Stubble

SOIL DESCRIPTION

% Sand: 77 **% OM:** 2.3 **Texture:** sandy loam
% Silt: 12 **pH:** 5.7
% Clay: 11 **CEC:** 6.7 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	03/14/11	04/06/11
Time of Day:	1:30 pm	11:50 am
Application Method:	Spray	Spray
Application Timing:	ESpring	LSpring
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	47 F	54 F
% Relative Humidity:	41	31
Wind Velocity, Unit:	5 mph	4 mph
Wind Direction:	Northwest	Southwest
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	44 F	50 F
Soil Surf. Moisture:	Dry	Moist
Root Zone Moisture:	Moist	Wet
Leaf Surf. Moisture:	Dry	Dry
% Cloud Cover:	65	0

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	CERVU	CERVU
Growth Stage:	vegetative	eaFlowr
Height, Unit:	2.5 in	4 in
Density,Unit:	0-800 m2	0-4 m2
Weed 2 Code:	ERPVE	ERPVE
Growth Stage:	flower	flower
Height, Unit:	2.5 in	5 in
Density,Unit:	90-400 m2	0-40 m2
Weed 3 Code:	HLOUM	HLOUM
Growth Stage:	vegetative	
Height, Unit:	2.5 in	
Density,Unit:	0-80 m2	
Weed 4 Code:	LAMAM	LAMAM
Growth Stage:	vegetative	eaFlowr
Height, Unit:	2 in	2 in
Density,Unit:	0-200 m2	0-40 m2
Weed 5 Code:	ARBTH	ARBTH
Growth Stage:	rosette	flower
Height, Unit:	2.5 in	3 in
Density,Unit:	0-160 m2	0-4 m2
Weed 6 Code:	SCRAN	SCRAN
Growth Stage:	vegetative	vegetative
Height, Unit:	2 in	2 in
Density,Unit:	0-1200 m2	0-200 m2
Weed 7 Code:	OTGUM	OTGUM
Growth Stage:	vegetative	
Height, Unit:	4 in	
Density,Unit:	0-100 m2	

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Backpack	Backpack
Operating Pressure:	31 psi	31 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	18 in	18 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	18 in	20 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	CO2	CO2

Timing of Winter Wheat Herbicide Applications							LAMAM	CERVU	ARBTH	HLOUM	ERICA
Trial ID: SG9-11 Cooperator:							Henbit	Mouseear	Mouseear	Jagged	Horse-
Location: Field #36 Investigator: Mark VanGessel							Control	Chickwd	Cress	Chickwd	weed
Weed Code							%	%	%	%	%
Weed or Crop Name							04/26/11	04/26/11	04/26/11	04/26/11	04/26/11
Weed or Crop Name											
Rating Data Type											
Rating Unit											
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Early (first N-application)				ESprng		63.3bcd	100.0a	100.0a		99.7a
	Harmony Extra SG Premix	50	SG	0.0234 lb ai/A	ESprng	A					
	Nonionic Surfactant	100	L	0.25 % v/v	ESprng	A					
	30% Urea Ammonium Nitrate	100	L	2 % v/v	ESprng	A					
2	Early (first N-application)				ESprng		56.7 cd	54.4 e	90.1 a		100.0 a
	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	ESprng	A					
	Nonionic Surfactant	100	L	0.25 % v/v	ESprng	A					
	30% Urea Ammonium Nitrate	100	L	2 % v/v	ESprng	A					
3	Early (first N-application)				ESprng		80.0 ab	91.7 ab	99.0 a		100.0 a
	PowerFlex.....pyroxulam	7.5	WG	0.0164 lb ai/A	ESprng	A					
	Nonionic Surfactant	100	L	0.25 % v/v	ESprng	A					
	30% Urea Ammonium Nitrate	100	L	2 % v/v	ESprng	A					
4	Early (first N-application)				ESprng		0.0e	0.0g	0.0d	0.0c	0.0e
	Axial XL.....pinoxaden	0.42	L	0.054 lb ai/A	ESprng	A					
	Nonionic Surfactant	100	L	0.25 % v/v	ESprng	A					
	30% Urea Ammonium Nitrate	100	L	2 % v/v	ESprng	A					
5	Early (first N-application)				ESprng		91.7 a	100.0a	100.0a	91.1 a	70.0 b
	Sencor.....metribuzin	75	DF	0.094 lb ai/A	ESprng	A					
	Nonionic Surfactant	100	L	0.25 % v/v	ESprng	A					
6	Early (first N-application)				ESprng		13.3e	0.0g	0.0d	0.0c	0.0e
	Aim.....carfentrazone	2	EW	0.0156 lb ai/A	ESprng	A					
	Nonionic Surfactant	100	L	0.25 % v/v	ESprng	A					
7	Early (first N-application)				ESprng		60.0bcd	39.4f	10.0d		24.7 d
	Starane EC.....fluroxypyr	1.5	EC	0.075 lb ai/A	ESprng	A					
8	Early (first N-application)				ESprng		0.0e	0.0g	0.0d	3.2c	0.0e
	Untreated Check										
9	Late (second N-application)				LSprng		80.0 ab	86.0bc	86.7 ab	64.6 b	62.2 bc
	Harmony Extra SG Premix	50	SG	0.0234 lb ai/A	LSprng	B					
	Nonionic Surfactant	100	L	0.25 % v/v	LSprng	B					
	30% Urea Ammonium Nitrate	100	L	2 % v/v	LSprng	B					
10	Late (second N-application)				LSprng		71.7 abc	51.1 e	60.0 c	13.3 c	99.7 a
	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	LSprng	B					
	Nonionic Surfactant	100	L	0.25 % v/v	LSprng	B					
	30% Urea Ammonium Nitrate	100	L	2 % v/v	LSprng	B					

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						LAMAM	CERVU	ARBTH	HLOUM	ERICA		
Weed or Crop Name						Henbit	Mouseear	Mouseear	Jagged	Horse-		
Weed or Crop Name						Control	Chickwd	Cress	Chickwd	weed		
Rating Data Type						%	Control	Control	Control	Control		
Rating Unit						%	%	%	%	%		
Rating Date						04/26/11	04/26/11	04/26/11	04/26/11	04/26/11		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Code					
11	Late (second N-application)					LSprng		64.3 bc	76.7 cd	71.7 bc	53.7 b	89.7 a
	PowerFlex.....pyroxsulam	7.5	WG	0.0164	lb ai/A	LSprng B						
	Nonionic Surfactant	100	L	0.25	% v/v	LSprng B						
	30% Urea Ammonium Nitrate	100	L	2	% v/v	LSprng B						
12	Late (second N-application)					LSprng		0.0 e	0.0 g	0.0 d	0.0 c	0.0 e
	Axial XL.....pinoxaden	0.42	L	0.054	lb ai/A	LSprng B						
	Nonionic Surfactant	100	L	0.25	% v/v	LSprng B						
	30% Urea Ammonium Nitrate	100	L	2	% v/v	LSprng B						
13	Late (second N-application)					LSprng		91.0 a	73.3 d	95.0 a	68.8 b	46.7 c
	Sencor.....metribuzin	75	DF	0.094	lb ai/A	LSprng B						
	Nonionic Surfactant	100	L	0.25	% v/v	LSprng B						
14	Late (second N-application)					LSprng		10.0 e	0.0 g	0.0 d	0.0 c	0.0 e
	Aim.....carfentrazone	2	EW	0.0156	lb ai/A	LSprng B						
	Nonionic Surfactant	100	L	0.25	% v/v	LSprng B						
15	Late (second N-application)					LSprng		43.3 d	73.0 d	16.7 d	0.0 c	0.9 e
	Starane EC.....fluroxypyr	1.5	EC	0.075	lb ai/A	LSprng B						
16	Late (second N-application)					LSprng		0.0 e	0.0 g	0.0 d	0.0 c	0.0 e
	Untreated Check											
LSD (P=.05)								20.21	11.35	17.98	17.80	18.31
Standard Deviation								12.12	6.72	10.77	10.17	10.84
CV								26.74	14.42	23.63	41.38	25.0
Replicate F								0.817	0.687	4.491	1.423	0.134
Replicate Prob(F)								0.4515	0.5130	0.0200	0.2738	0.8752
Treatment F								25.661	109.712	52.353	34.415	50.105
Treatment Prob(F)								0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							VERPG	OEOLA	LOLMU	POANN	
Weed or Crop Name							Purslane	Cutleaf	Annual	Annual	
Weed or Crop Name							Speedwll	EPrimrse	Ryegrass	Bluegrss	
Rating Data Type							Control	Control	Control	Control	
Rating Unit							%	%	%	%	
Rating Date							04/26/11	04/26/11	04/26/11	04/26/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Code				
1	Early (first N-application)					ESprng		100.0 a	66.4 cde	0.0 d	0.0 d
	Harmony Extra SG Premix	50	SG	0.0234	lb ai/A	ESprng	A				
	Nonionic Surfactant	100	L	0.25	% v/v	ESprng	A				
	30% Urea Ammonium Nitrate	100	L	2	% v/v	ESprng	A				
2	Early (first N-application)					ESprng		10.0 cd	43.3 ef	90.0 a	92.9 a
	Osprey.....mesosulfuron	4.5	WG	0.0134	lb ai/A	ESprng	A				
	Nonionic Surfactant	100	L	0.25	% v/v	ESprng	A				
	30% Urea Ammonium Nitrate	100	L	2	% v/v	ESprng	A				
3	Early (first N-application)					ESprng		98.2 a	98.2 a	88.3 a	73.6 ab
	PowerFlex.....pyroxsulam	7.5	WG	0.0164	lb ai/A	ESprng	A				
	Nonionic Surfactant	100	L	0.25	% v/v	ESprng	A				
	30% Urea Ammonium Nitrate	100	L	2	% v/v	ESprng	A				
4	Early (first N-application)					ESprng		0.0 d	0.0 g	100.0 a	
	Axial XL.....pinoxaden	0.42	L	0.054	lb ai/A	ESprng	A				
	Nonionic Surfactant	100	L	0.25	% v/v	ESprng	A				
	30% Urea Ammonium Nitrate	100	L	2	% v/v	ESprng	A				
5	Early (first N-application)					ESprng		70.1 b	89.3 abc	69.6 b	34.2 c
	Sencor.....metribuzin	75	DF	0.094	lb ai/A	ESprng	A				
	Nonionic Surfactant	100	L	0.25	% v/v	ESprng	A				
6	Early (first N-application)					ESprng		0.0 d	11.5 g	0.0 d	0.0 d
	Aim.....carfentrazone	2	EW	0.0156	lb ai/A	ESprng	A				
	Nonionic Surfactant	100	L	0.25	% v/v	ESprng	A				
7	Early (first N-application)					ESprng		0.0 d	74.0 bcd	0.0 d	0.0 d
	Starane EC.....fluroxypyr	1.5	EC	0.075	lb ai/A	ESprng	A				
8	Early (first N-application)					ESprng		0.0 d	0.0 g	0.0 d	0.0 d
	Untreated Check										
9	Late (second N-application)					LSprng		100.0 a	60.0 def	0.0 d	0.0 d
	Harmony Extra SG Premix	50	SG	0.0234	lb ai/A	LSprng	B				
	Nonionic Surfactant	100	L	0.25	% v/v	LSprng	B				
	30% Urea Ammonium Nitrate	100	L	2	% v/v	LSprng	B				
10	Late (second N-application)					LSprng		0.0 d	40.5 f	89.0 a	81.6 ab
	Osprey.....mesosulfuron	4.5	WG	0.0134	lb ai/A	LSprng	B				
	Nonionic Surfactant	100	L	0.25	% v/v	LSprng	B				
	30% Urea Ammonium Nitrate	100	L	2	% v/v	LSprng	B				

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						VERPG	OEOLA	LOLMU	POANN
Weed or Crop Name						Purslane	Cutleaf	Annual	Annual
Weed or Crop Name						Speedwll	EPrimrse	Ryegrass	Bluegrss
Rating Data Type						Control	Control	Control	Control
Rating Unit						%	%	%	%
Rating Date						04/26/11	04/26/11	04/26/11	04/26/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Code		
11	Late (second N-application)					LSprng			
	PowerFlex.....pyroxsulam	7.5	WG	0.0164	lb ai/A	LSprng	B	98.9 a	90.5 ab
	Nonionic Surfactant	100	L	0.25	% v/v	LSprng	B		
	30% Urea Ammonium Nitrate	100	L	2	% v/v	LSprng	B		
12	Late (second N-application)					LSprng			
	Axial XL.....pinoxaden	0.42	L	0.054	lb ai/A	LSprng	B	0.0 d	0.0 g
	Nonionic Surfactant	100	L	0.25	% v/v	LSprng	B		
	30% Urea Ammonium Nitrate	100	L	2	% v/v	LSprng	B		
13	Late (second N-application)					LSprng			
	Sencor.....metribuzin	75	DF	0.094	lb ai/A	LSprng	B	23.8 c	
	Nonionic Surfactant	100	L	0.25	% v/v	LSprng	B		
14	Late (second N-application)					LSprng			
	Aim.....carfentrazone	2	EW	0.0156	lb ai/A	LSprng	B	0.0 d	4.0 g
	Nonionic Surfactant	100	L	0.25	% v/v	LSprng	B		
15	Late (second N-application)					LSprng			
	Starane EC.....fluroxypyr	1.5	EC	0.075	lb ai/A	LSprng	B	0.0 d	0.0 d
16	Late (second N-application)					LSprng			
	Untreated Check							0.0 d	0.0 d
LSD (P=.05)						15.93	23.86	14.48	20.29
Standard Deviation						9.32	12.92	8.63	10.99
CV						29.77	29.07	20.44	36.54
Replicate F						1.545	3.470	1.448	2.612
Replicate Prob(F)						0.2389	0.0763	0.2535	0.1275
Treatment F						67.479	25.884	83.182	36.093
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Timing of Winter Wheat Herbicide Applications										
Trial ID: SG9-11		Cooperator:								
Location: Field #36		Investigator: Mark VanGessel								
Weed Code	LAMAM	CERVU	ARBTH	HLOUM	ERICA	VERPG	OEOLA	LOLMU	POANN	
Weed or Crop Name	Henbit	Mouseear	Mouseear	Jagged	Horse-	Purslane	Cutleaf	Annual	Annual	
Weed or Crop Name		Chickwd	Cress	Chickwd	weed	Speedwll	EPrimrse	Ryegrass	Bluegrss	
Rating Data Type	Control	Control	Control	Control	Control	Control	Control	Control	Control	
Rating Unit	%	%	%	%	%	%	%	%	%	
Rating Date	04/26/11	04/26/11	04/26/11	04/26/11	04/26/11	04/26/11	04/26/11	04/26/11	04/26/11	
Trt Treatment	Rate									
No. Name	Rate	Unit								
TABLE OF R MEANS										
Replicate 1	47.2	48.2	51.9	28.6	42.8	29.9	51.7	45.1	24.7	
Replicate 2	42.2	45.5	40.8	22.8	42.8	34.6	43.1	40.1	33.8	
Replicate 3	46.6	46.1	44.1	22.3	44.5	29.4	38.6	41.4	31.7	
TABLE OF A MEANS										
1 Early-1st N-app	45.6	48.2	49.9	23.6	49.3	34.8	47.8	43.5	28.7	
2 Late-2nd N-app	45.0	45.0	41.3	25.1	37.4	27.8	39.0	40.9	31.5	
TABLE OF B MEANS										
1 Harmony Extra S 1 Nonionic Surf. 1 30% UAN	0.0234 lb ai/A 0.25 % v/v 2 % v/v	71.7	93.0	93.3	64.6	81.0	100.0	63.2	0.0	0.0
2 Osprey 2 Nonionic Surf. 2 30% UAN	0.0134 lb ai/A 0.25 % v/v 2 % v/v	64.2	52.7	75.1	13.3	99.9	5.0	41.9	89.5	87.2
3 PowerFlex 3 Nonionic Surf. 3 30% UAN	0.0164 lb ai/A 0.25 % v/v 2 % v/v	72.2	84.2	85.3	53.7	94.9	98.6	94.3	93.6	74.0
4 Axial XL 4 Nonionic Surf. 4 30% UAN	0.054 lb ai/A 0.25 % v/v 2 % v/v	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.5	.
5 Sencor 5 Nonionic Surf.	0.094 lb ai/A 0.25 % v/v	91.3	86.7	97.5	79.9	58.3	47.0	89.3	57.1	49.2
6 Aim 6 Nonionic Surf.	0.0156 lb ai/A 0.25 % v/v	11.7	0.0	0.0	0.0	0.0	0.0	7.8	0.0	0.0
7 Starane EC	0.075 lb ai/A	51.7	56.2	13.3	0.0	12.8	0.0	74.0	0.0	0.0
8 Untreated Check		0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0
TABLE OF AB MEANS										
1 Early-1st N-app 1 Harmony Extra S 1 Nonionic Surf. 1 30% UAN	0.0234 lb ai/A 0.25 % v/v 2 % v/v	63.3	100.0	100.0	.	99.7	100.0	66.4	0.0	0.0
2 Late-2nd N-app 1 Harmony Extra S 1 Nonionic Surf. 1 30% UAN	0.0234 lb ai/A 0.25 % v/v 2 % v/v	80.0	86.0	86.7	64.6	62.2	100.0	60.0	0.0	0.0

Timing of Winter Wheat Herbicide Applications

Trial ID: SG9-11 Cooperator:
 Location: Field #36 Investigator: Mark VanGessel
 FACTORIAL/POOLED ERROR AOV For LAMAM Henbit Control % 04/26/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	61212.666667				
R	2	240.041667	120.020833	0.817	0.4515	8.8
A	1	4.083333	4.083333	0.028	0.8687	7.1
B	7	55007.666667	7858.238095	53.474	0.0001	14.3
AB	7	1552.250000	221.750000	1.509	0.2021	20.2
ERROR	30	4408.625000	146.954167			

FACTORIAL/POOLED ERROR AOV For CERVU Mouseear Chickwd Control % 04/26/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	75393.870851				
R	2	62.031748	31.015874	0.896	0.4188	4.2
A	1	121.181525	121.181525	3.501	0.0711	3.5
B	7	70887.242219	10126.748888	292.586	0.0001	6.9
AB	7	3285.078662	469.296952	13.559	0.0001	9.8
ERROR	30	1038.336695	34.611223			

FACTORIAL/POOLED ERROR AOV For ARBTH Mouseear Cress Control % 04/26/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	95437.562019				
R	2	1041.241221	520.620610	4.646	0.0175	7.6
A	1	895.276770	895.276770	7.989	0.0083	6.2
B	7	88183.987405	12597.712486	112.419	0.0001	12.5
AB	7	1955.237863	279.319695	2.493	0.0383	17.6
ERROR	30	3361.818761	112.060625			

FACTORIAL/POOLED ERROR AOV For HLOUM Jagged Chickwd Control % 04/26/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	46294.793985				
R	2	220.552757	110.276378	2.176	0.1311	5.1
A	1	2114.830740	2114.830740	41.730	0.0001	4.2
B	7	32924.849255	4703.549894	92.812	0.0001	8.4
AB	7	9514.209948	1359.172850	26.820	0.0001	11.9
ERROR	30	1520.351286	50.678376			

FACTORIAL/POOLED ERROR AOV For ERICA Horse- weed Control % 04/26/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	91026.675927				
R	2	31.524325	15.762163	0.175	0.8403	6.9
A	1	1700.163978	1700.163978	18.877	0.0001	5.6
B	7	84355.943970	12050.849139	133.801	0.0001	11.2
AB	7	2237.074485	319.582069	3.548	0.0068	15.8
ERROR	30	2701.969169	90.065639			

FACTORIAL/POOLED ERROR AOV For VERPG Purslane Speedwll Control % 04/26/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	89874.285106				
R	2	268.589835	134.294918	2.440	0.1043	5.4
A	1	578.922151	578.922151	10.519	0.0029	4.4
B	7	84591.384382	12084.483483	219.585	0.0001	8.7
AB	7	2784.387639	397.769663	7.228	0.0001	12.4
ERROR	30	1651.001098	55.033370			

FACTORIAL/POOLED ERROR AOV For OEOLA Cutleaf EPrimrse Control % 04/26/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	68931.425927				
R	2	940.991013	470.495507	8.212	0.0014	5.5
A	1	6608.240117	6608.240117	115.333	0.0001	4.5
B	7	45851.627620	6550.232517	114.321	0.0001	8.9
AB	7	13811.658749	1973.094107	34.436	0.0001	12.6
ERROR	30	1718.908427	57.296948			

FACTORIAL/POOLED ERROR AOV For LOLMU Annual Ryegrass Control % 04/26/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	95004.008310				
R	2	215.455426	107.727713	1.670	0.2052	5.8
A	1	78.275356	78.275356	1.214	0.2794	4.7
B	7	91707.934056	13101.133437	203.131	0.0001	9.5
AB	7	1067.466907	152.495272	2.364	0.0475	13.4
ERROR	30	1934.876565	64.495885			

FACTORIAL/POOLED ERROR AOV For POANN Annual Bluegrss Control % 04/26/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	63082.335765				
R	2	551.616912	275.808456	7.103	0.0030	4.5
A	1	71.920066	71.920066	1.852	0.1837	3.7
B	7	59819.228458	8545.604065	220.082	0.0001	7.3
AB	7	1474.694789	210.670684	5.426	0.0004	10.4
ERROR	30	1164.875541	38.829185			

Broadleaf Weed Control in Winter Wheat

Trial ID: SG10-11 Cooperator: Dow, Syngenta
 Location: Field #9 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947
Investigator: Mark VanGessel

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Henbit	LAMAM	Lamium amplexicaule L.
2.	Cutleaf Evening Primrose	OEOLA	Oenothera laciniata Hill
3.	Vetch species	VICSS	Vicia Ssp.
4.	Knawel	SCRAN	Scleranthus annuus L.
5.	Common Chickweed	STEME	Stellaria media (L.) Vill./cyr.
6.	Mouseear Chickweed	CERVU	Cerastium vulgatum L.
7.	Wild Garlic	ALLVI	Allium vineale L.
8.	Shepherdspurse	CAPBP	Capsella bursa-pastoris (L.) Medik.
9.	Field Pansy	VIORA	Viola rafinesquii Greene
10.	Redstem Filaree	EROCI	Erodium cicutarium (L.) L'Her. ex Ait.

Crop 1: Non-Crop

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage

SOIL DESCRIPTION

% Sand: 83 **% OM:** 1.4 **Texture:** loamy sand
% Silt: 8 **pH:** 5.4
% Clay: 9 **CEC:** 6.1 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.1 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	03/28/11
Time of Day:	1:00 pm
Application Method:	Spray
Application Timing:	Spring
Applic. Placement:	Brdcst
Air Temp., Unit:	39 F
% Relative Humidity:	29
Wind Velocity, Unit:	6 mph
Wind Direction:	West
Dew Presence (Y/N):	N
Soil Temp., Unit:	38 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	15

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	LAMAM
Growth Stage:	flower
Height, Unit:	6 in
Density,Unit:	16-160 m2
Weed 2 Code:	OEOLA
Growth Stage:	rosette
Height, Unit:	3.5 in
Density,Unit:	0-50 m2
Weed 3 Code:	VICSS
Growth Stage:	vegetative
Height, Unit:	3.5 in
Density,Unit:	40-320 m2
Weed 4 Code:	SCRAN
Growth Stage:	vegetative
Height, Unit:	3 in
Density,Unit:	90-500 m2
Weed 5 Code:	STEME
Growth Stage:	flower
Height, Unit:	5 in
Density,Unit:	0-40 m2
Weed 6 Code:	CERVU
Growth Stage:	flower
Height, Unit:	5 in
Density,Unit:	80-240 m2
Weed 7 Code:	ALLVI
Growth Stage:	vegetative
Height, Unit:	9 in
Density,Unit:	0-100 m2
Weed 8 Code:	CAPBP
Growth Stage:	flower
Height, Unit:	9 in
Density,Unit:	0-20 m2
Weed 9 Code:	VIORA
Growth Stage:	flower
Height, Unit:	2.5 in
Density,Unit:	0-80 m2
Weed10 Code:	EROCI
Growth Stage:	early-flwr
Height, Unit:	7 in
Density,Unit:	0-40 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Backpack
Operating Pressure:	31 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	24 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	CO2

Trial Comments

5-14-11; Treatment 7 provided approx. 50-60% control of corn speedwell.

Broadleaf Weed Control in Winter Wheat							VICSS	OEOLA	EROCI	SCRAN	VIORA	CERVU
Trial ID: SG10-11 Cooperator: Dow, Syngenta							Vetch	Cutleaf	Redstem	Knawel	Field	Mouseear
Location: Field #9 Investigator: Mark VanGessel							Species	EPrimse	Filaree	Control	Pansy	Chickwd
Weed Code							Control	Control	Control	Control	Control	Control
Weed or Crop Name							%	%	%	%	%	%
Rating Data Type							%	%	%	%	%	%
Rating Unit							04/06/11	04/06/11	04/06/11	04/06/11	04/06/11	04/06/11
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code						
1	Untreated Check						0.0 d	0.0 f	0.0 c	0.0 d	0.0 e	0.0 d
2	PowerFlex HL....pyroxsulam	13.1	WG	0.0164 lb ai/A	Spring	A	90.0 ab	66.7 bcd	26.7 bc	81.7 a	68.3 bc	71.7 c
	30% Urea Ammonium Nitrate	100L		2% v/v	Spring	A						
	Nonionic Surfactant	100L		0.25% v/v	Spring	A						
3	Harmony Extra SG Premix	50	SG	0.0234 lb ai/A	Spring	A	81.0 bc	56.7 cd	60.7 a	70.0 ab	76.7 ab	76.7 bc
	30% Urea Ammonium Nitrate	100L		2% v/v	Spring	A						
	Nonionic Surfactant	100L		0.25% v/v	Spring	A						
4	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	Spring	A	76.7 c	33.3 e	13.2 c	71.7 ab	36.7 d	70.0 c
	30% Urea Ammonium Nitrate	100L		2% v/v	Spring	A						
	Nonionic Surfactant	100L		0.25% v/v	Spring	A						
5	Everest.....flucarbazone	70	WG	0.0262 lb ai/A	Spring	A	77.7 bc	50.0 de	52.4 ab	20.0 c	53.3 c	71.7 c
	30% Urea Ammonium Nitrate	100L		2% v/v	Spring	A						
	Nonionic Surfactant	100L		0.25% v/v	Spring	A						
6	Pulsar Premix	1.67	EC	0.163 lb ae/A	Spring	A	96.3 a	86.7 a	56.7 a	71.7 ab	21.7 d	68.3 c
	MCPA Ester 4	3.7	EC	0.249 lb ae/A	Spring	A						
7	Pulsar Premix	1.67	EC	0.163 lb ae/A	Spring	A	94.0 a	81.0 ab	60.0 a	65.0 ab	58.3 c	83.3 ab
	Harmony Extra SG Premix	50	SG	0.014 lb ai/A	Spring	A						
8	PowerFlex HL....pyroxsulam	13.1	WG	0.0164 lb ai/A	Spring	A	95.0 a	71.7 abc	43.3 ab	61.7 b	85.0 a	76.7 bc
	Starane Ultra...fluroxypyr	2.8	EC	0.105 lb ae/A	Spring	A						
	30% Urea Ammonium Nitrate	100L		2% v/v	Spring	A						
	Nonionic Surfactant	100L		0.25% v/v	Spring	A						
	Nonionic Surfactant	100L		0.25% v/v	Spring	A						
9	Metribuzin.....metribuzin	75	DF	0.094 lb ai/A	Spring	A	0.0 d	0.0 f	2.4 c	0.0 d	0.0 e	90.0 a
	Nonionic Surfactant	100L		0.25% v/v	Spring	A						
10	Starane Ultra...fluroxypyr	2.8	EC	0.14 lb ae/A	Spring	A	94.0 a	74.3 abc	46.7 ab	56.7 b	21.7 d	73.3 c
LSD (P=.05)							12.66	18.46	27.12	19.31	15.89	9.48
Standard Deviation							7.38	10.76	15.38	11.26	9.26	5.53
CV							10.47	20.68	42.48	22.59	21.97	8.11
Replicate F							1.560	1.283	0.786	3.557	11.485	2.727
Replicate Prob(F)							0.2373	0.3013	0.4763	0.0499	0.0006	0.0923
Treatment F							78.923	25.689	7.161	22.738	33.097	60.573
Treatment Prob(F)							0.0001	0.0001	0.0009	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							VICSS	OEOLA	EROCI	SCRAN	VIORA
Weed or Crop Name							Vetch	Cutleaf	Redstem	Knawel	Field
Weed or Crop Name							Species	EPrimrse	Filaree		Pansy
Rating Data Type							Control	Control	Control	Control	Control
Rating Unit							%	%	%	%	%
Rating Date							05/14/11	05/14/11	05/14/11	05/14/11	05/14/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code					
1	Untreated Check						0.0 d	0.0 e	0.0 f	0.0 c	0.0 d
2	PowerFlex HL.....pyroxsulam	13.1	WG	0.0164 lb ai/A	Spring	A	83.9 ab	88.3 ab	20.0 def	87.7 a	85.0 a
	30% Urea Ammonium Nitrate	100L		2% v/v	Spring	A					
	Nonionic Surfactant	100L		0.25% v/v	Spring	A					
3	Harmony Extra SG Premix	50	SG	0.0234 lb ai/A	Spring	A	53.3 c	66.7 c	77.1 a	90.3 a	60.0 ab
	30% Urea Ammonium Nitrate	100L		2% v/v	Spring	A					
	Nonionic Surfactant	100L		0.25% v/v	Spring	A					
4	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	Spring	A	66.7 bc	13.3 e	46.7 bcd	40.0 b	30.0 bcd
	30% Urea Ammonium Nitrate	100L		2% v/v	Spring	A					
	Nonionic Surfactant	100L		0.25% v/v	Spring	A					
5	Everest.....flucarbazone	70	WG	0.0262 lb ai/A	Spring	A	63.2 c	36.7 d	47.7 bc	10.0 c	30.0 bcd
	30% Urea Ammonium Nitrate	100L		2% v/v	Spring	A					
	Nonionic Surfactant	100L		0.25% v/v	Spring	A					
6	Pulsar Premix	1.67	EC	0.163 lb ae/A	Spring	A	97.9 a	100.0 a	40.0 cde	82.7 a	23.3 cd
	MCPA Ester 4	3.7	EC	0.249 lb ae/A	Spring	A					
7	Pulsar Premix	1.67	EC	0.163 lb ae/A	Spring	A	99.0 a	81.7 bc	73.3 ab	90.3 a	43.3 bc
	Harmony Extra SG Premix	50	SG	0.014 lb ai/A	Spring	A					
8	PowerFlex HL.....pyroxsulam	13.1	WG	0.0164 lb ai/A	Spring	A	99.0 a	87.7 ab	0.0 f	87.0 a	78.3 a
	Starane Ultra...fluroxypyr	2.8	EC	0.105 lb ae/A	Spring	A					
	30% Urea Ammonium Nitrate	100L		2% v/v	Spring	A					
	Nonionic Surfactant	100L		0.25% v/v	Spring	A					
	Nonionic Surfactant	100L		0.25% v/v	Spring	A					
9	Metribuzin.....metribuzin	75	DF	0.094 lb ai/A	Spring	A	0.0 d	0.0 e	26.7 c-f	13.3 c	26.7 cd
	Nonionic Surfactant	100L		0.25% v/v	Spring	A					
10	Starane Ultra...fluroxypyr	2.8	EC	0.14 lb ae/A	Spring	A	73.3 bc	65.0 c	13.3 ef	46.7 b	30.0 bcd
LSD (P=.05)							20.36	17.31	26.96	19.81	32.11
Standard Deviation							11.54	10.09	15.58	11.55	18.72
CV							18.14	18.7	45.18	21.07	46.02
Replicate F							2.341	2.871	1.012	0.149	2.657
Replicate Prob(F)							0.1354	0.0828	0.3857	0.8624	0.0974
Treatment F							30.990	43.438	9.305	31.081	5.954
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0007

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							CERVU	POAAN	ALLVI	
Weed or Crop Name							Mouseear	Annual	Wild	
Weed or Crop Name							Chickwd	Bluegrss	Garlic	
Rating Data Type							Control	Control	Control	
Rating Unit							%	%	%	
Rating Date							05/14/11	05/14/11	05/26/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Code			
1	Untreated Check							0.0e	0.0c	0.0c
2	PowerFlex HL.....pyroxsulam	13.1	WG	0.0164	lb ai/A	Spring	A	94.0ab	54.6b	100.0a
	30% Urea Ammonium Nitrate	100	L	2%	v/v	Spring	A			
	Nonionic Surfactant	100	L	0.25%	v/v	Spring	A			
3	Harmony Extra SG Premix	50	SG	0.0234	lb ai/A	Spring	A	96.7a	0.0c	100.0a
	30% Urea Ammonium Nitrate	100	L	2%	v/v	Spring	A			
	Nonionic Surfactant	100	L	0.25%	v/v	Spring	A			
4	Osprey.....mesosulfuron	4.5	WG	0.0134	lb ai/A	Spring	A	36.7d	95.0a	0.0c
	30% Urea Ammonium Nitrate	100	L	2%	v/v	Spring	A			
	Nonionic Surfactant	100	L	0.25%	v/v	Spring	A			
5	Everest.....flucarbazone	70	WG	0.0262	lb ai/A	Spring	A	40.0d	0.3c	99.0a
	30% Urea Ammonium Nitrate	100	L	2%	v/v	Spring	A			
	Nonionic Surfactant	100	L	0.25%	v/v	Spring	A			
6	Pulsar Premix	1.67	EC	0.163	lb ae/A	Spring	A	86.7abc	22.5c	0.0c
	MCPA Ester 4	3.7	EC	0.249	lb ae/A	Spring	A			
7	Pulsar Premix	1.67	EC	0.163	lb ae/A	Spring	A	88.3abc	0.0c	73.3b
	Harmony Extra SG Premix	50	SG	0.014	lb ai/A	Spring	A			
8	PowerFlex HL.....pyroxsulam	13.1	WG	0.0164	lb ai/A	Spring	A	94.3ab	68.3ab	99.0a
	Starane Ultra...fluroxypyr	2.8	EC	0.105	lb ae/A	Spring	A			
	30% Urea Ammonium Nitrate	100	L	2%	v/v	Spring	A			
	Nonionic Surfactant	100	L	0.25%	v/v	Spring	A			
	Nonionic Surfactant	100	L	0.25%	v/v	Spring	A			
9	Metribuzin.....metribuzin	75	DF	0.094	lb ai/A	Spring	A	76.7c	0.4c	0.0c
	Nonionic Surfactant	100	L	0.25%	v/v	Spring	A			
10	Starane Ultra...fluroxypyr	2.8	EC	0.14	lb ae/A	Spring	A	78.3bc	0.4c	0.0c
LSD (P=.05)							16.10	27.60	8.48	
Standard Deviation							9.39	13.81	4.94	
CV							13.57	57.2	10.48	
Replicate F							4.099	1.098	0.804	
Replicate Prob(F)							0.0341	0.3922	0.4629	
Treatment F							35.977	19.825	310.846	
Treatment Prob(F)							0.0001	0.0008	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Spring Treatments for Annual Ryegrass Control

Trial ID: SG11-11 Cooperator: Dow AgroSciences
 Location: Field #30 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947
Investigator: Mark VanGessel

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Annual Ryegrass	LOLMU	Lolium multiflorum Lam.
2.	Knawel	SCRAN	Scleranthus annuus L.

Crop 1: Winter Wheat **TRZAW** **Variety:** Jamestown
Planting Date: 10/26/10 **Planting Method:** Drilled **Depth:** 0.75 in
Rate: 150 lb/A **Row Spacing:** 7 in **Seed Bed:** Medium
Soil Temperature: 75 F **Soil Moisture:** Moist **Emergence Date:** 11/03/10

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

SOIL DESCRIPTION

% Sand: 83 **% OM:** 1.1 **Texture:** loamy sand
% Silt: 8 **pH:** 5.7
% Clay: 9 **CEC:** 4.3 **Fert. Level:** Medium

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.4 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	03/15/11
Time of Day:	4:00 pm
Application Method:	Spray
Application Timing:	Spring
Applic. Placement:	Brdcst
Air Temp., Unit:	49 F
% Relative Humidity:	59
Wind Velocity, Unit:	4 mph
Wind Direction:	Southeast
Dew Presence (Y/N):	N
Soil Temp., Unit:	49 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	50

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code:	TRZAW
Growth Stage:	2-4 tiller
Height, Unit:	4.5 in
Crop Health:	Good

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	LOLMU
Growth Stage:	3-4 tiller
Height, Unit:	2 in
Density,Unit:	150 m2
Weed 2 Code:	SCRAN
Growth Stage:	vegetative
Height, Unit:	1.5 in
Density,Unit:	100 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Backpack
Operating Pressure:	31 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	CO2

Trial Comments

6-1-11: ryegrass control based on mature seedhead production

Spring Treatments for Annual Ryegrass Control						
Trial ID: SG11-11 Cooperator: Dow AgroSciences						
Location: Field #30 Investigator: Mark VanGessel						
Weed Code	Crop Code	Weed or Crop Name	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date
TRZAW	LOLMU	LOLMU				
Winter	Annual	Annual				
Wheat	Ryegrass	Ryegrass				
Stunting	Control	Control				
%	%	%				
04/06/11	04/27/11	06/01/11				
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code
1	PowerFlex.....pyroxsulam	7.5	WG	0.0164 lb ai/A	Spring	A
	Nonionic Surfactant	100L		0.25 % v/v	Spring	A
	30% Urea Ammonium Nitrate	100L		2 % v/v	Spring	A
2	PowerFlex HL.....pyroxsulam	13.1	WG	0.0164 lb ai/A	Spring	A
	Nonionic Surfactant	100L		0.25 % v/v	Spring	A
	30% Urea Ammonium Nitrate	100L		2 % v/v	Spring	A
3	Osprey.....mesosulfuron	4.5	WG	0.0134 lb ai/A	Spring	A
	Untreated Check					
	Nonionic Surfactant	100L		0.25 % v/v	Spring	A
	30% Urea Ammonium Nitrate	100L		2 % v/v	Spring	A
4	Axial XL.....pinoxaden	0.42	L	0.054 lb ai/A	Spring	A
	Nonionic Surfactant	100L		0.25 % v/v	Spring	A
	30% Urea Ammonium Nitrate	100L		2 % v/v	Spring	A
LSD (P=.05)						
Standard Deviation						
CV						
Replicate F						
Replicate Prob(F)						
Treatment F						
Treatment Prob(F)						

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Spring Treatments for Annual Bluegrass Control

Trial ID: SG12-11 Cooperator: Dow AgroSciences
 Location: Calhoun Farm Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947
Investigator: Mark VanGessel

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Annual Bluegrass	POAAN	Poa annua L.
2.	Common Chickweed	STEME	Stellaria media (L.) Vill./cyr.
3.	Henbit	LAMAM	Lamium amplexicaule L.
4.	Whitlowgrass	ERPVE	Draba verna L.
5.	Mouseear Cress	ARBTH	Arabidopsis thaliana (L.) Heynh.
6.	Hairy Bittercress	CARHI	Cardamine hirsuta L.

Crop 1: Non-Crop

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Conventional Tillage

APPLICATION DESCRIPTION

	A
Application Date:	03/22/11
Time of Day:	12:45 pm
Application Method:	Spray
Application Timing:	Spring
Applic. Placement:	Brdcst
Air Temp., Unit:	57 F
% Relative Humidity:	49
Wind Velocity, Unit:	4 mph
Wind Direction:	Northwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	57 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	50

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	POAAN
Growth Stage:	vegetative
Height, Unit:	2 in
Density,Unit:	80-120 m2
Weed 2 Code:	STEME
Growth Stage:	flower
Height, Unit:	8 in
Density,Unit:	40 m2
Weed 3 Code:	LAMAM
Growth Stage:	flower
Height, Unit:	7 in
Density,Unit:	40 m2
Weed 4 Code:	ERPVE
Growth Stage:	flower
Height, Unit:	4 in
Density,Unit:	40 m2
Weed 5 Code:	ARBTH
Growth Stage:	rosette
Height, Unit:	2.5 in
Density,Unit:	0-15 m2
Weed 6 Code:	CARHI
Growth Stage:	flower
Height, Unit:	5 in
Density,Unit:	0-15 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Backpack
Operating Pressure:	31 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	CO2

Spring Treatments for Annual Bluegrass Control							POAAN	LAMAM	STEME	POAAN	LAMAM	STEME
Trial ID: SG12-11		Cooperator: Dow AgroSciences					Annual	Henbit	Common	Annual	Henbit	Common
Location: Calhoun Farm		Investigator: Mark VanGessel					Bluegrss	Control	Chickwd	Bluegrss	Control	Chickwd
Weed Code	Weed or Crop Name	Form	Form	Rate	Grow	Control	Control	Control	Control	Control	Control	
Rating Data Type	Rating Unit	Conc	Type	Rate	Unit	%	%	%	%	%	%	
Rating Date					Stg	04/22/11	04/22/11	04/22/11	05/07/11	05/07/11	05/07/11	
Trt No.	Treatment Name	Form	Form	Rate	Grow							
		Conc	Type	Rate	Unit							
1	Untreated Check					0.0d	0.0d	0.0e	0.0e	0.0d	0.0e	
2	PowerFlex HL....pyroxsulam	13.1	WG	0.0164	lb ai/A	53.3 b	60.0 b	71.7 bc	65.0 c	30.0 c	99.0 a	
	Nonionic Surfactant	100	L	0.25	% v/v							
	30% Urea Ammonium Nitrate	100	L	2	% v/v							
3	Sencor.....metribuzin	75	DF	0.094	lb ai/A	23.3 c	88.3 a	78.3 b	31.7 d	80.0 b	55.0 bc	
	Nonionic Surfactant	100	L	0.25	% v/v							
	30% Urea Ammonium Nitrate	100	L	2	% v/v							
4	Sencor.....metribuzin	75	DF	0.14	lb ai/A	33.3 c	94.0 a	90.7 a	36.7 d	81.0 b	65.0 bc	
	Nonionic Surfactant	100	L	0.25	% v/v							
	30% Urea Ammonium Nitrate	100	L	2	% v/v							
5	PowerFlex HL....pyroxsulam	13.1	WG	0.0164	lb ai/A	61.7 ab	95.0 a	91.7 a	58.3 c	77.7 b	99.0 a	
	Sencor.....metribuzin	75	DF	0.094	lb ai/A							
	Nonionic Surfactant	100	L	0.25	% v/v							
	30% Urea Ammonium Nitrate	100	L	2	% v/v							
6	PowerFlex HL....pyroxsulam	13.1	WG	0.0164	lb ai/A	66.7 a	96.3 a	94.0 a	58.3 c	99.0 a	99.0 a	
	Sencor.....metribuzin	75	DF	0.14	lb ai/A							
	Nonionic Surfactant	100	L	0.25	% v/v							
	30% Urea Ammonium Nitrate	100	L	2	% v/v							
7	Osprey.....mesosulfuron	4.5	WG	0.0134	lb ai/A	66.7 a	60.0 b	46.7 d	89.3 a	0.0 d	20.0 d	
	Nonionic Surfactant	100	L	0.25	% v/v							
	30% Urea Ammonium Nitrate	100	L	2	% v/v							
8	Maverick.....sulfosulfuron	75	WG	0.0314	lb ai/A	61.7 ab	60.0 b	66.7 c	79.3 b	40.0 c	70.0 b	
	Nonionic Surfactant	100	L	0.25	% v/v							
9	Starane Ultra...fluroxypyr	2.8	EC	0.105	lb ai/A	0.0 d	36.7 c	63.3 c	0.0 e	30.0 c	50.0 c	
10	Harmony Extra SG Premix	50	SG	0.0219	lb ai/A	10.0 d	65.0 b	88.3 a	0.0 e	40.0 c	99.0 a	
	Nonionic Surfactant	100	L	0.25	% v/v							
	30% Urea Ammonium Nitrate	100	L	2	% v/v							
LSD (P=.05)						11.99	9.87	8.81	9.46	11.71	15.94	
Standard Deviation						6.99	5.75	5.14	5.52	6.83	9.29	
CV						18.56	8.78	7.43	13.18	14.3	14.17	
Replicate F						2.932	1.125	0.759	0.395	0.957	0.260	
Replicate Prob(F)						0.0790	0.3463	0.4827	0.6792	0.4027	0.7736	
Treatment F						47.091	84.299	93.085	110.858	78.467	43.294	
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Vetch Control in Winter Wheat

Trial ID: SG14-11 Cooperator:
 Location: UD-REC Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Vetch species	VICSS	Vicia Ssp.

Crop 1: Non-Crop

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 1
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage

SOIL DESCRIPTION

% Sand: 83 **% OM:** 1.4 **Texture:** loamy sand
% Silt: 8 **pH:** 5.4
% Clay: 9 **CEC:** 6.1 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.1 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	04/25/11
Time of Day:	2:50 pm
Application Method:	Spray
Application Timing:	Spring
Applic. Placement:	Brdcst
Air Temp., Unit:	84 F
% Relative Humidity:	51
Wind Velocity, Unit:	4 mph
Wind Direction:	Southwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	80 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	15

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	VICSS
Growth Stage:	flowering
Height, Unit:	12 in
Density, Unit:	10-20 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Backpack
Operating Pressure:	31 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	30 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	CO2

Vetch Control in Winter Wheat							VICSA Vetch Species Stunting %	VICSA Vetch Species Stunting %	VICSA Vetch Reductn Seeds %	
Trial ID: SG14-11 Cooperator:										
Location: UD-REC Investigator: Mark VanGessel										
Weed Code							05/10/11	05/31/11	05/31/11	
Weed or Crop Name										
Rating Data Type										
Rating Unit										
Rating Date										
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Code			
1	Untreated Check							0.0	0.0	0.0
2	Harmony Extra SG Premix	50	SG	0.028 lb ai/A	Spring	A		20.0	15.0	90.0
	Nonionic Surfactant	100	L	0.25 % v/v	Spring	A				
	30% Urea Ammonium Nitrate	100	L	2 % v/v	Spring	A				
3	Starane EC.....fluroxypyr	1.5	EC	0.056 lb ai/A	Spring	A		40.0	0.0	85.0
4	Starane EC.....fluroxypyr	1.5	EC	0.075 lb ai/A	Spring	A		40.0	0.0	90.0
5	2,4-D amine	3.8	L	0.237 lb ai/A	Spring	A		60.0	85.0	100.0
6	2,4-D amine	3.8	L	0.119 lb ai/A	Spring	A		50.0	70.0	100.0
7	Starane EC.....fluroxypyr	1.5	EC	0.056 lb ai/A	Spring	A		.	40.0	95.0
	2,4-D amine	3.8	L	0.119 lb ai/A	Spring	A				
8	Stinger.....cloprralid	3	EC	0.047 lb ai/A	Spring	A		50.0	.	.
9	Starane Ultra...fluroxypyr	2.8	EC	0.105 lb ai/A	Spring	A		50.0	70.0	90.0
10	Starane Ultra...fluroxypyr	2.8	EC	0.14 lb ai/A	Spring	A		50.0	80.0	90.0
LSD (P=.05)							.	.	.	
Standard Deviation							.	.	.	
CV							.	.	.	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Ignite Postemergence in Soybeans

Trial ID: Soy1-11 Cooperator: Bayer
 Location: Field #3 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947
Investigator: Mark VanGessel

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Crabgrass Species	DIGSS	Digitaria sp.
2.	Morningglory Species	IPOSS	Ipomoea sp.
3.	Common Ragweed	AMBEL	Ambrosia artemisifolia L.

Crop 1: Soybean **GLXMA** **Variety:** LL499N
Planting Date: 05/11/11 **Planting Method:** Row- Unit Planter **Depth:** 1 in
Rate: 4 Sd/row-ft **Row Spacing:** 15 in **Seed Bed:** Firm/Trashy
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/18/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Soybean Stubble

SOIL DESCRIPTION

% Sand: 79 **% OM:** 2.1 **Texture:** sandy loam
% Silt: 10 **pH:** 5.6
% Clay: 11 **CEC:** 7.2 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05/11/11	05/31/11	06/16/11
Time of Day:	3:30 pm	10:15 am	11:15 am
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	V1-2	3-4"wds
Applic. Placement:	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	66 F	86 F	76 F
% Relative Humidity:	54	58	44
Wind Velocity, Unit:	5 mph	2 mph	2 mph
Wind Direction:	East	Northeast	Southwest
Dew Presence (Y/N):	N	N	N
Soil Temp., Unit:	67 F	84 F	75 F
Soil Surf. Moisture:	Dry	Dry	Dry
Root Zone Moisture:	Moist	Moist	Dry
Leaf Surf. Moisture:	Dry	Dry	Dry
% Cloud Cover:	15	40	70

CROP STAGE AT EACH APPLICATION			
	A	B	C
Crop 1 Code:	GLXMA	GLXMA	GLXMA
Growth Stage:		V1	V4
Height, Unit:		4 in	7 in
Crop Health:		Good	MoistStrs

WEED STAGE AT EACH APPLICATION			
	A	B	C
Weed 1 Code:	DIGSS	DIGSS	DIGSS
Growth Stage:		1-3 leaf	
Height, Unit:		1 in	
Density,Unit:		0-30 m2	
Weed 2 Code:	IPOSS	IPOSS	IPOSS
Growth Stage:		1-3 leaf	vegetative
Height, Unit:		2.5 in	3.5 in
Density,Unit:		2-15 m2	0-10 m2
Weed 3 Code:	AMBEL	AMBEL	AMBEL
Growth Stage:			vegetative
Height, Unit:			4 in
Density,Unit:			0-3 m2

APPLICATION EQUIPMENT			
	A	B	C
Appl. Equipment:	Tractor	Tractor	Tractor
Operating Pressure:	40 psi	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	20 in	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	20 in	22 in	24 in
Ground Speed, Unit:	3 mph	3 mph	3 mph
Carrier:	water	water	water
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air	Comp. Air

Ignite Postemergence in Soybeans

Trial ID: Soy1-11 Cooperator: Bayer
 Location: Field #3 Investigator: Mark VanGessel

Weed Code						GLXMA	AMASS	IPOSS	OEOLA	AMASS	
Crop Code						Soybean	Pigweed	Morngrly	Cutleaf	Pigweed	
Weed or Crop Name						Stunting	Species	Species	EPrimrse	Species	
Weed or Crop Name						%	Control	Control	Control	Control	
Rating Data Type						%	%	%	%	%	
Rating Unit						06/01/11	06/01/11	06/01/11	06/01/11	07/05/11	
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Untreated Check						0.0 a	0.0 b	0.0 b	0.0 c	0.0 b
	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A	PRE	A					
	Nonionic Surfactant	100 L		0.25 % v/v	PRE	A					
2	Prefix Premix	5.3 E		0.99 lb ai/A	PRE	A	0.0 a	100.0 a	50.0 a	33.3 b	100.0 a
	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A	PRE	A					
	Nonionic Surfactant	100 L		0.25 % v/v	PRE	A					
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A	3-4"wds	C					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	3-4"wds	C					
3	Authority First Premix	70 DF		0.262 lb ai/A	PRE	A	0.0 a	66.7 a	61.7 a	86.7 a	99.0 a
	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A	PRE	A					
	Nonionic Surfactant	100 L		0.25 % v/v	PRE	A					
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A	3-4"wds	C					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	3-4"wds	C					
4	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A	PRE	A	0.0 a	0.0 b	0.0 b	0.0 c	100.0 a
	Nonionic Surfactant	100 L		0.25 % v/v	PRE	A					
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A	V1-2	B					
	Dual II Magnum..s-metolachlor	7.64 E		1.27 lb ai/A	V1-2	B					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	V1-2	B					
5	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A	PRE	A	0.0 a	0.0 b	0.0 b	0.0 c	100.0 a
	Nonionic Surfactant	100 L		0.25 % v/v	PRE	A					
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A	V1-2	B					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	V1-2	B					
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A	3-4"wds	C					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	3-4"wds	C					
6	Valor XLT Premix	40.3 WG		0.0756 lb ai/A	PRE	A	3.3 a	100.0 a	60.0 a	85.0 a	100.0 a
	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A	PRE	A					
	Nonionic Surfactant	100 L		0.25 % v/v	PRE	A					
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A	3-4"wds	C					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	3-4"wds	C					
7	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A	PRE	A	0.0 a	0.0 b	0.0 b	0.0 c	100.0 a
	Nonionic Surfactant	100 L		0.25 % v/v	PRE	A					
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A	V1-2	B					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	V1-2	B					
	Zidua.....pyroxasulfone	85 WG		0.08 lb ai/A	V1-2	B					
8	Dual II Magnum..s-metolachlor	7.64 E		1.24 lb ai/A	PRE	A	0.0 a	100.0 a	0.0 b	56.7 b	100.0 a
	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A	PRE	A					
	Nonionic Surfactant	100 L		0.25 % v/v	PRE	A					
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A	3-4"wds	C					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	3-4"wds	C					
	Firstrate.....cloransulam	84 WG		0.0157 lb ai/A	3-4"wds	C					
	Nonionic Surfactant	100 L		0.25 % v/v	3-4"wds	C					
LSD (P=.05)						3.58	35.75	34.68	23.34	1.07	
Standard Deviation						2.04	20.41	19.80	13.32	0.61	
CV						489.9	44.54	92.28	40.74	0.7	
Replicate F						1.000	1.000	0.927	1.027	1.000	
Replicate Prob(F)						0.3927	0.3927	0.4187	0.3836	0.3927	
Treatment F						1.000	18.143	6.797	25.347	9972.430	
Treatment Prob(F)						0.4706	0.0001	0.0012	0.0001	0.0001	

University of Delaware

Weed Code						IPOSS	AMBEL	DIGSA
Crop Code						Morngrly	Common	Large
Weed or Crop Name						Species	Ragweed	Crabgras
Weed or Crop Name						Control	Control	Control
Rating Data Type						%	%	%
Rating Unit						07/05/11	07/05/11	07/05/11
Rating Date								
Trt	Treatment	Form	Form	Rate	Grow	Appl		
No.	Name	Conc	Type	Rate	Unit	Stg	Code	
1	Untreated Check							
	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A		
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A		
2	Prefix Premix	5.3	E	0.99 lb ai/A	PRE	A	76.0 ab	100.0 a
	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A		
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A		
	Ignite 280.....glufosinate	2.34	SL	0.53 lb ai/A	3-4"wds	C		
	Dry Ammonium Sulfate	100	D	1.02 % w/v	3-4"wds	C		
3	Authority First Premix	70	DF	0.262 lb ai/A	PRE	A	86.0 a	100.0 a
	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A		
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A		
	Ignite 280.....glufosinate	2.34	SL	0.53 lb ai/A	3-4"wds	C		
	Dry Ammonium Sulfate	100	D	1.02 % w/v	3-4"wds	C		
4	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A	23.3 c	100.0 a
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A		
	Ignite 280.....glufosinate	2.34	SL	0.53 lb ai/A	V1-2	B		
	Dual II Magnum..s-metolachlor	7.64	E	1.27 lb ai/A	V1-2	B		
	Dry Ammonium Sulfate	100	D	1.02 % w/v	V1-2	B		
5	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A	60.0 b	100.0 a
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A		
	Ignite 280.....glufosinate	2.34	SL	0.53 lb ai/A	V1-2	B		
	Dry Ammonium Sulfate	100	D	1.02 % w/v	V1-2	B		
	Ignite 280.....glufosinate	2.34	SL	0.53 lb ai/A	3-4"wds	C		
	Dry Ammonium Sulfate	100	D	1.02 % w/v	3-4"wds	C		
6	Valor XLT Premix	40.3	WG	0.0756 lb ai/A	PRE	A	76.0 ab	100.0 a
	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A		
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A		
	Ignite 280.....glufosinate	2.34	SL	0.53 lb ai/A	3-4"wds	C		
	Dry Ammonium Sulfate	100	D	1.02 % w/v	3-4"wds	C		
7	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A	23.3 c	100.0 a
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A		
	Ignite 280.....glufosinate	2.34	SL	0.53 lb ai/A	V1-2	B		
	Dry Ammonium Sulfate	100	D	1.02 % w/v	V1-2	B		
	Zidua.....pyroxasulfone	85	WG	0.08 lb ai/A	V1-2	B		
8	Dual II Magnum..s-metolachlor	7.64	E	1.24 lb ai/A	PRE	A	82.0 a	100.0 a
	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A		
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A		
	Ignite 280.....glufosinate	2.34	SL	0.53 lb ai/A	3-4"wds	C		
	Dry Ammonium Sulfate	100	D	1.02 % w/v	3-4"wds	C		
	Firstrate.....cloransulam	84	WG	0.0157 lb ai/A	3-4"wds	C		
	Nonionic Surfactant	100	L	0.25 % v/v	3-4"wds	C		
LSD (P=.05)						21.31	0.00	5.90
Standard Deviation						12.17	0.00	3.37
CV						22.82	0.0	3.9
Replicate F						0.251	0.000	0.539
Replicate Prob(F)						0.7814	1.0000	0.5949
Treatment F						22.013	0.000	323.286
Treatment Prob(F)						0.0001	1.0000	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

PRE and POST Weed Control in Glyphosate-tolerant Soybeans

Trial ID: Soy2-11 Cooperator: FMC, Syngenta, Dow
 Location: Field #3 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947
Investigator: Mark VanGessel

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Pigweed Species	AMASS	Amaranthus sp.
2.	Crabgrass Species	DIGSS	Digitaria sp.
3.	Morningglory Species	IPOSS	Ipomoea sp.

Crop 1: Soybean **GLXMA** **Variety:** H418N
Planting Date: 05/12/11 **Planting Method:** Row- Unit Planter **Depth:** 1 in
Rate: 4 Sd/row-ft **Row Spacing:** 15 in **Seed Bed:** Firm/Trashy
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/20/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Soybean Stubble

SOIL DESCRIPTION

% Sand: 79 **% OM:** 2.1 **Texture:** sandy loam
% Silt: 10 **pH:** 5.6
% Clay: 11 **CEC:** 7.2 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05/12/11	05/31/11	06/21/11
Time of Day:	4:30 pm	10:15 am	9:00 am
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	V1-2	V4-5
Applic. Placement:	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	71 F	86 F	68 F
% Relative Humidity:	50	58	84
Wind Velocity, Unit:	1 mph	2 mph	0 mph
Wind Direction:	Southeast	Northeast	N/A
Dew Presence (Y/N):	N	N	Y
Soil Temp., Unit:	71 F	84 F	67 F
Soil Surf. Moisture:	Dry	Dry	Moist
Root Zone Moisture:	Moist	Moist	Moist
Leaf Surf. Moisture:	Dry	Dry	Moist
% Cloud Cover:	45	40	100

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code:	GLXMA	GLXMA	GLXMA
Growth Stage:		V1	V5
Height, Unit:		3 in	10 in
Crop Health:		Poor	Poor

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:	AMASS	AMASS	AMASS
Growth Stage:		2-4 leaf	vegetative
Height, Unit:		1 in	7 in
Density, Unit:		0-2 m2	0-2 m2
Weed 2 Code:	DIGSS	DIGSS	DIGSS
Growth Stage:		1-3 leaf	2-3 tillr
Height, Unit:		1 in	6 in
Density, Unit:		0-30 m2	0-30 m2
Weed 3 Code:	IPOSS	IPOSS	IPOSS
Growth Stage:		cotyledon	vegetative
Height, Unit:		1 in	6 in
Density, Unit:		0-5 m2	0-5 m2

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	Tractor	Tractor	Tractor
Operating Pressure:	40 psi	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	20 in	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	20 in	24 in	28 in
Ground Speed, Unit:	3 mph	3 mph	3 mph
Carrier:	water	water	water
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air	Comp. Air

Trial Comments

5/31/11 - Stand is poor due to insect and varmint damage.
6/1/11 - Heavy feeding damage. Ratings for injury are difficult and inconsistent.

PRE and POST Weed Control in Glyphosate-tolerant Soybeans												
Trial ID: Soy2-11 Cooperator: FMC, Syngenta, Dow												
Location: Field #3 Investigator: Mark VanGessel												
Weed Code	Crop Code	Weed or Crop Name	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date	GLXMA Soybean	AMASS Pigweed	IPOSS Morngrly	OEOLA Cutleaf	AMASS Pigweed	
							Stunting %	Species Control %	Species Control %	EPrimrse Control %	Species Control %	
							06/01/11	06/01/11	06/01/11	06/01/11	07/06/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code					
1	Untreated Check							0.0	0.0b	0.0d	0.0c	0.0c
	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A		PRE	A					
	Nonionic Surfactant	100 L		0.25 % v/v		PRE	A					
2	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A		PRE	A	0.0	0.0b	0.0d	0.0c	100.0a
	Nonionic Surfactant	100 L		0.25 % v/v		PRE	A					
	F-9310-6	2 SE		0.125 lb ai/A		V1-2	B					
	Classic.....chlorimuron	25 WG		0.0117 lb ai/A		V1-2	B					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A		V1-2	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v		V1-2	B					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A		V4-5	C					
	Dry Ammonium Sulfate	100 D		1.5 % w/v		V4-5	C					
3	Valor XLT Premix	40.3 WG		0.0756 lb ai/A		PRE	A	0.0	100.0a	100.0a	95.0a	100.0a
	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A		PRE	A					
	Nonionic Surfactant	100 L		0.25 % v/v		PRE	A					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A		V4-5	C					
	Dry Ammonium Sulfate	100 D		1.5 % w/v		V4-5	C					
4	Fierce Premix	76 WG		0.142 lb ai/A		PRE	A	0.0	100.0a	85.0abc	86.7a	100.0a
	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A		PRE	A					
	Nonionic Surfactant	100 L		0.25 % v/v		PRE	A					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A		V4-5	C					
	Dry Ammonium Sulfate	100 D		1.5 % w/v		V4-5	C					
5	Authority XL Premix	70 DG		0.175 lb ai/A		PRE	A	0.0	100.0a	81.7bc	100.0a	100.0a
	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A		PRE	A					
	Nonionic Surfactant	100 L		0.25 % v/v		PRE	A					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A		V4-5	C					
	Dry Ammonium Sulfate	100 D		1.5 % w/v		V4-5	C					
6	Authority MTZ Premix	45 DF		0.28 lb ai/A		PRE	A	0.0	100.0a	94.3ab	100.0a	100.0a
	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A		PRE	A					
	Nonionic Surfactant	100 L		0.25 % v/v		PRE	A					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A		V4-5	C					
	Dry Ammonium Sulfate	100 D		1.5 % w/v		V4-5	C					
7	Prefix Premix	5.3 E		1.33 lb ai/A		PRE	A	0.0	100.0a	73.3c	63.1b	100.0a
	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A		PRE	A					
	Nonionic Surfactant	100 L		0.25 % v/v		PRE	A					
	Touchdown Total...k glyphosate	4.17 SL		0.78 lb ae/A		V4-5	C					
	Dry Ammonium Sulfate	100 D		1.5 % w/v		V4-5	C					
8	Authority MTZ Premix	45 DF		0.28 lb ai/A		PRE	A		100.0a	88.3abc	100.0a	100.0a
	Gramoxone Inteon..paraquat	2 SL		1 lb ai/A		PRE	A					
	Nonionic Surfactant	100 L		0.25 % v/v		PRE	A					
	F-9310-6	2 SE		0.094 lb ai/A		V1-2	B					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A		V1-2	B					
	Dry Ammonium Sulfate	100 D		1.5 % w/v		V1-2	B					

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						GLXMA	AMASS	IPOSS	OEOLA	AMASS		
Crop Code						Soybean	Pigweed	Morngrly	Cutleaf	Pigweed		
Weed or Crop Name							Species	Species	EPrimrse	Species		
Weed or Crop Name							Control	Control	Control	Control		
Rating Data Type						Stunting	Control	Control	Control	Control		
Rating Unit						%	%	%	%	%		
Rating Date						06/01/11	06/01/11	06/01/11	06/01/11	07/06/11		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Code					
9	Dual II Magnum..s-metolachlor	7.64	E	0.955	lb ai/A	PRE	A	0.0	100.0a	0.0d	50.0b	100.0a
	Gramoxone Inteon..paraquat	2	SL	1	lb ai/A	PRE	A					
	Nonionic Surfactant	100	L	0.25	% v/v	PRE	A					
	Reflex.....fomesafen	2	L	0.25	lb ai/A	V4-5	C					
	Roundup PowerMax..glyphosate	4.5	AS	0.77	lb ae/A	V4-5	C					
	Dry Ammonium Sulfate	100	D	1.5	% w/v	V4-5	C					
10	Gramoxone Inteon..paraquat	2	SL	1	lb ai/A	PRE	A		0.0b	0.0d	0.0c	100.0a
	Nonionic Surfactant	100	L	0.25	% v/v	PRE	A					
	Flexstar GT Premix	3.3	L	1.44	lb ai/A	V1-2	B					
	Dry Ammonium Sulfate	100	D	1.5	% w/v	V1-2	B					
11	Gramoxone Inteon..paraquat	2	SL	1	lb ai/A	PRE	A		0.0b	0.0d	0.0c	98.3a
	Nonionic Surfactant	100	L	0.25	% v/v	PRE	A					
	Sequence Premix	5.25	EW	2.3	lb ai/A	V1-2	B					
	Firstrate.....cloransulam	84	WG	0.0157	lb ai/A	V1-2	B					
	Dry Ammonium Sulfate	100	D	1.5	% w/v	V1-2	B					
12	Gramoxone Inteon..paraquat	2	SL	1	lb ai/A	PRE	A		0.0b	0.0d	0.0c	84.0b
	Nonionic Surfactant	100	L	0.25	% v/v	PRE	A					
	Firstrate.....cloransulam	84	WG	0.0157	lb ai/A	V1-2	B					
	Durango DMA.....glyphosate	4	SL	0.75	lb ae/A	V1-2	B					
	Dry Ammonium Sulfate	100	D	1.5	% w/v	V1-2	B					
13	Sonic Premix	70	DF	0.131	lb ai/A	PRE	A		100.0a	93.3ab	91.7a	100.0a
	Gramoxone Inteon..paraquat	2	SL	1	lb ai/A	PRE	A					
	Nonionic Surfactant	100	L	0.25	% v/v	PRE	A					
	Durango DMA.....glyphosate	4	SL	0.75	lb ae/A	V4-5	C					
	Dry Ammonium Sulfate	100	D	1.5	% w/v	V4-5	C					
14	Prefix Premix	5.3	E	1.33	lb ai/A	PRE	A		100.0a	88.3abc	50.0b	100.0a
	Gramoxone Inteon..paraquat	2	SL	1	lb ai/A	PRE	A					
	Nonionic Surfactant	100	L	0.25	% v/v	PRE	A					
	Cadet.....fluthiacet	0.91	EC	.00427	lb ai/A	V4-5	C					
	Touchdown Total...k glyphosate	4.17	SL	0.78	lb ae/A	V4-5	C					
	Dry Ammonium Sulfate	100	D	1.5	% w/v	V4-5	C					
LSD (P=.05)							.	0.00	15.01	22.72	9.62	
Standard Deviation							.	0.00	8.93	13.51	5.73	
CV							.	0.0	17.74	25.68	6.25	
Replicate F								0.000	0.091	2.578	0.906	
Replicate Prob(F)								1.0000	0.9134	0.0959	0.4164	
Treatment F								0.000	78.370	31.841	65.189	
Treatment Prob(F)								1.0000	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							AMBEL	CHEAL	IPOSS	DIGSA
Crop Code										
Weed or Crop Name							Common	Common	Morningly	Large
Weed or Crop Name							Ragweed	Lambqtrs	Species	Crabgras
Rating Data Type							Control	Control	Control	Control
Rating Unit							%	%	%	%
Rating Date							07/06/11	07/06/11	07/06/11	07/06/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg				
1	Untreated Check						0.0 b	0.0 c	0.0 f	0.0 c
	Gramoxone Inteon..paraquat	2	SL	1 lb	ai/A	PRE A				
	Nonionic Surfactant	100	L	0.25 %	v/v	PRE A				
2	Gramoxone Inteon..paraquat	2	SL	1 lb	ai/A	PRE A	100.0 a	100.0 a	90.0 ab	100.0 a
	Nonionic Surfactant	100	L	0.25 %	v/v	PRE A				
	F-9310-6	2	SE	0.125 lb	ai/A	V1-2 B				
	Classic.....chlorimuron	25	WG	0.0117 lb	ai/A	V1-2 B				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	V1-2 B				
	Dry Ammonium Sulfate	100	D	1.5 %	w/v	V1-2 B				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	V4-5 C				
	Dry Ammonium Sulfate	100	D	1.5 %	w/v	V4-5 C				
3	Valor XLT Premix	40.3	WG	0.0756 lb	ai/A	PRE A	100.0 a	100.0 a	80.7 abc	100.0 a
	Gramoxone Inteon..paraquat	2	SL	1 lb	ai/A	PRE A				
	Nonionic Surfactant	100	L	0.25 %	v/v	PRE A				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	V4-5 C				
	Dry Ammonium Sulfate	100	D	1.5 %	w/v	V4-5 C				
4	Fierce Premix	76	WG	0.142 lb	ai/A	PRE A	100.0 a	100.0 a	77.7 abc	100.0 a
	Gramoxone Inteon..paraquat	2	SL	1 lb	ai/A	PRE A				
	Nonionic Surfactant	100	L	0.25 %	v/v	PRE A				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	V4-5 C				
	Dry Ammonium Sulfate	100	D	1.5 %	w/v	V4-5 C				
5	Authority XL Premix	70	DG	0.175 lb	ai/A	PRE A	100.0 a	100.0 a	75.0 bcd	100.0 a
	Gramoxone Inteon..paraquat	2	SL	1 lb	ai/A	PRE A				
	Nonionic Surfactant	100	L	0.25 %	v/v	PRE A				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	V4-5 C				
	Dry Ammonium Sulfate	100	D	1.5 %	w/v	V4-5 C				
6	Authority MTZ Premix	45	DF	0.28 lb	ai/A	PRE A	100.0 a	100.0 a	87.3 ab	100.0 a
	Gramoxone Inteon..paraquat	2	SL	1 lb	ai/A	PRE A				
	Nonionic Surfactant	100	L	0.25 %	v/v	PRE A				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	V4-5 C				
	Dry Ammonium Sulfate	100	D	1.5 %	w/v	V4-5 C				
7	Prefix Premix	5.3	E	1.33 lb	ai/A	PRE A	100.0 a	100.0 a	81.0 abc	100.0 a
	Gramoxone Inteon..paraquat	2	SL	1 lb	ai/A	PRE A				
	Nonionic Surfactant	100	L	0.25 %	v/v	PRE A				
	Touchdown Total...k glyphosate	4.17	SL	0.78 lb	ae/A	V4-5 C				
	Dry Ammonium Sulfate	100	D	1.5 %	w/v	V4-5 C				
8	Authority MTZ Premix	45	DF	0.28 lb	ai/A	PRE A	100.0 a	100.0 a	60.0 de	100.0 a
	Gramoxone Inteon..paraquat	2	SL	1 lb	ai/A	PRE A				
	Nonionic Surfactant	100	L	0.25 %	v/v	PRE A				
	F-9310-6	2	SE	0.094 lb	ai/A	V1-2 B				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	V1-2 B				
	Dry Ammonium Sulfate	100	D	1.5 %	w/v	V1-2 B				

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

						AMBEL	CHEAL	IPOSS	DIGSA	
						Common Ragweed Control %	Common Lambqtrs Control %	Mornngly Species Control %	Large Crabgras Control %	
						07/06/11	07/06/11	07/06/11	07/06/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code				
9	Dual II Magnum..s-metolachlor	7.64	E	0.955 lb ai/A	PRE	A	100.0 a	94.0 b	81.7 abc	100.0 a
	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A				
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A				
	Reflex.....fomesafen	2	L	0.25 lb ai/A	V4-5	C				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	V4-5	C				
	Dry Ammonium Sulfate	100	D	1.5 % w/v	V4-5	C				
10	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A	100.0 a	100.0 a	53.3 e	100.0 a
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A				
	Flexstar GT Premix	3.3	L	1.44 lb ai/A	V1-2	B				
	Dry Ammonium Sulfate	100	D	1.5 % w/v	V1-2	B				
11	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A	100.0 a	100.0 a	67.3 cde	100.0 a
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A				
	Sequence Premix	5.25	EW	2.3 lb ai/A	V1-2	B				
	Firstrate.....cloransulam	84	WG	0.0157 lb ai/A	V1-2	B				
	Dry Ammonium Sulfate	100	D	1.5 % w/v	V1-2	B				
12	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A	100.0 a	100.0 a	56.7 e	83.3 b
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A				
	Firstrate.....cloransulam	84	WG	0.0157 lb ai/A	V1-2	B				
	Durango DMA.....glyphosate	4	SL	0.75 lb ae/A	V1-2	B				
	Dry Ammonium Sulfate	100	D	1.5 % w/v	V1-2	B				
13	Sonic Premix	70	DF	0.131 lb ai/A	PRE	A	100.0 a	100.0 a	79.0 abc	100.0 a
	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A				
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A				
	Durango DMA.....glyphosate	4	SL	0.75 lb ae/A	V4-5	C				
	Dry Ammonium Sulfate	100	D	1.5 % w/v	V4-5	C				
14	Prefix Premix	5.3	E	1.33 lb ai/A	PRE	A	100.0 a	100.0 a	91.7 a	100.0 a
	Gramoxone Inteon..paraquat	2	SL	1 lb ai/A	PRE	A				
	Nonionic Surfactant	100	L	0.25 % v/v	PRE	A				
	Cadet.....fluthiacet	0.91	EC	.00427 lb ai/A	V4-5	C				
	Touchdown Total...k glyphosate	4.17	SL	0.78 lb ae/A	V4-5	C				
	Dry Ammonium Sulfate	100	D	1.5 % w/v	V4-5	C				
LSD (P=.05)						0.00	3.56	15.33	6.85	
Standard Deviation						0.00	2.12	9.13	4.08	
CV						0.0	2.3	13.03	4.45	
Replicate F						0.000	1.000	4.540	1.000	
Replicate Prob(F)						1.0000	0.3816	0.0204	0.3816	
Treatment F						0.000	473.509	19.824	128.846	
Treatment Prob(F)						1.0000	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Efficacy of Various Dicamba Formulations

Trial ID: Soy4-11 Cooperator: Monsanto
 Location: Field #9 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947
Investigator: Mark VanGessel

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Ivyleaf Morningglory	IPOHE	Ipomoea hederacea (L.) Jacq.
2.	Pitted Morningglory	IPOLA	Ipomoea lacunosa L.
3.	Prickly Sida	SIDSP	Sida spinosa L.
4.	Palmer Amaranth	AMAPA	Amaranthus palmeri S.Wats.
5.	Large Crabgrass	DIGSA	Digitaria sanguinalis (L.) Scop.
6.	Stinkgrass	ERAME	Eragrostis cilianensis (All.) E.Mosher
7.	Goosegrass	ELEIN	Eleusine indica (L.) Gaertn.

Crop 1: Non-Crop**SITE AND DESIGN**

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** FACTORIAL
Tillage Type: Disked Twice

MAINTENANCE

Field Prep./Maintenance: For each application timing, plots were sprayed with Select Max for annual grass control approximately one week after treatment applications.

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	09/19/11	Select Max	1	EC	24	fl oz/A
2.	09/19/11	30% UAN			2	% v/v
3.	09/19/11	Crop Oil Concentrate			1	% v/v
4.	10/05/11	Select Max	1	EC	24	fl oz/A
5.	10/05/11	30% UAN			2	% v/v
6.	10/05/11	Crop Oil Concentrate			1	% v/v

SOIL DESCRIPTION

% Sand: 83 **% OM:** 1.4 **Texture:** loamy sand
% Silt: 8 **pH:** 5.4
% Clay: 9 **CEC:** 6.1 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.1 **Unit:** mi

APPLICATION DESCRIPTION		
	A	B
Application Date:	09/12/11	09/22/11
Time of Day:	9:45 am	3:30 pm
Application Method:	Spray	Spray
Application Timing:	3"wds	6"wds
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	74 F	79 F
% Relative Humidity:	71	74
Wind Velocity, Unit:	1 mph	2 mph
Wind Direction:	Northeast	Southwest
Dew Presence (Y/N):	Y	N
Soil Temp., Unit:	70 F	78 F
Soil Surf. Moisture:	Moist	Moist
Root Zone Moisture:	Moist	Moist
Leaf Surf. Moisture:	Wet	Dry
% Cloud Cover:	0	95

WEED STAGE AT EACH APPLICATION		
	A	B
Weed 1 Code:	IPOHE	IPOHE
Growth Stage:	vegetative	flower
Height, Unit:	4 in	7 in
Density, Unit:	0-30 m2	0-30 m2
Weed 2 Code:	IPOLA	IPOLA
Growth Stage:	vegetative	flower
Height, Unit:	4 in	7 in
Density, Unit:	0-30 m2	0-30 m2
Weed 3 Code:	SIDSP	SIDSP
Growth Stage:	vegetative	flower
Height, Unit:	3.5 in	5 in
Density, Unit:	0-80 m2	0-80 m2
Weed 4 Code:	AMAPA	AMAPA
Growth Stage:	seed	flwr-seed
Height, Unit:	5 in	8 in
Density, Unit:	0-20 m2	0-20 m2
Weed 5 Code:	DIGSA	DIGSA
Growth Stage:	seed	seed
Height, Unit:	10 in	14 in
Density, Unit:	0-25 m2	0-25 m2
Weed 6 Code:	ERAME	ERAME
Growth Stage:	seed	seed
Height, Unit:	7 in	10 in
Density, Unit:	0-60 m2	0-60 m2
Weed 7 Code:	ELEIN	ELEIN
Growth Stage:	seed	seed
Height, Unit:	7 in	9 in
Density, Unit:	0-25 m2	0-25 m2

APPLICATION EQUIPMENT		
	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	28 in	30 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air

Efficacy of Various Dicamba Formulations													
Trial ID: Soy4-11 Cooperator: Monsanto													
Location: Field #9 Investigator: Mark VanGessel													
Weed Code							IPOHE Ivyleaf Morngrly Control %	SIDSP Prickly Sida Control %	AMAPA Palmer Amaranth Control %	IPOHE Ivyleaf Morngrly Control %	SIDSP Prickly Sida Control %	AMAPA Palmer Amaranth Control %	
Weed or Crop Name							09/28/11	09/28/11	09/28/11	10/16/11	10/16/11	10/16/11	
Rating Data Type													
Rating Unit													
Rating Date													
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	Appl Code						
1	Clarity.....dicamba	4L		0.25 lb ae/A		3"wds	A	79.3 a-d	56.7 b-e	86.7 a-d	89.7 cde	60.5 i	91.3 a-f
	Class Act	100L		2.5 % v/v		3"wds	A						
	Nonionic Surfactant	100L		0.25 % v/v		3"wds	A						
	3" weeds												
	Low Rate												
2	Clarity.....dicamba	4L		0.375 lb ae/A		3"wds	A	83.7 abc	74.8 abc	71.7 c-g	91.3 bcd	80.3 b-g	83.3 fg
	Class Act	100L		2.5 % v/v		3"wds	A						
	Nonionic Surfactant	100L		0.25 % v/v		3"wds	A						
	3" weeds												
	Medium Rate												
3	Clarity.....dicamba	4L		0.5 lb ae/A		3"wds	A	91.3 a	78.3 ab	95.4 a	99.0 a	83.7 a-e	99.0 ab
	Class Act	100L		2.5 % v/v		3"wds	A						
	Nonionic Surfactant	100L		0.25 % v/v		3"wds	A						
	3" weeds												
	High Rate												
4	Clarity.....dicamba	4L		0.25 lb ae/A		6"wds	B	53.3 f	20.0 ghi	43.3 j	82.6 e	60.0 i	71.7 h
	Class Act	100L		2.5 % v/v		6"wds	B						
	Nonionic Surfactant	100L		0.25 % v/v		6"wds	B						
	6" weeds												
	Low Rate												
5	Clarity.....dicamba	4L		0.375 lb ae/A		6"wds	B	71.0 b-e	30.0 fgh	53.3 hij	99.1 a	70.0 f-i	86.0 d-g
	Class Act	100L		2.5 % v/v		6"wds	B						
	Nonionic Surfactant	100L		0.25 % v/v		6"wds	B						
	6" weeds												
	Medium Rate												
6	Clarity.....dicamba	4L		0.5 lb ae/A		6"wds	B	58.3 ef	23.3 ghi	58.4 g-j	96.3 abc	73.3 e-h	84.1 fg
	Class Act	100L		2.5 % v/v		6"wds	B						
	Nonionic Surfactant	100L		0.25 % v/v		6"wds	B						
	6" weeds												
	High Rate												
7	MON 100555	4SL		0.25 lb ae/A		3"wds	A	86.0 ab	61.1 a-e	80.9 a-e	95.3 abc	70.0 f-i	90.1 b-g
	Class Act	100L		2.5 % v/v		3"wds	A						
	Nonionic Surfactant	100L		0.25 % v/v		3"wds	A						
	3" weeds												
	Low Rate												
8	MON 100555	4SL		0.375 lb ae/A		3"wds	A	83.7 abc	66.7 a-d	84.9 a-d	98.3 ab	82.0 a-f	90.7 b-f
	Class Act	100L		2.5 % v/v		3"wds	A						
	Nonionic Surfactant	100L		0.25 % v/v		3"wds	A						
	3" weeds												
	Medium Rate												
9	MON 100555	4SL		0.5 lb ae/A		3"wds	A	82.3 abc	68.6 abc	87.3 abc	99.0 a	89.5 ab	97.7 abc
	Class Act	100L		2.5 % v/v		3"wds	A						
	Nonionic Surfactant	100L		0.25 % v/v		3"wds	A						
	3" weeds												
	High Rate												

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						IPOHE	SIDSP	AMAPA	IPOHE	SIDSP	AMAPA	
Weed or Crop Name						Ivyleaf	Prickly	Palmer	Ivyleaf	Prickly	Palmer	
Weed or Crop Name						Morngrly	Sida	Amaranth	Morngrly	Sida	Amaranth	
Rating Data Type						Control	Control	Control	Control	Control	Control	
Rating Unit						%	%	%	%	%	%	
Rating Date						09/28/11	09/28/11	09/28/11	10/16/11	10/16/11	10/16/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code						
10	MON 100555	4 SL		0.25 lb ae/A	6"wds B		57.7 ef	26.7 fgh	60.0 f-j	87.3 de	63.3 hi	83.3 fg
	Class Act	100 L		2.5 % v/v	6"wds B							
	Nonionic Surfactant	100 L		0.25 % v/v	6"wds B							
	6" weeds											
	Low Rate											
11	MON 100555	4 SL		0.375 lb ae/A	6"wds B		75.0 a-e	43.3 d-g	63.3 f-i	99.0 a	69.3 ghi	81.7 g
	Class Act	100 L		2.5 % v/v	6"wds B							
	Nonionic Surfactant	100 L		0.25 % v/v	6"wds B							
	6" weeds											
	Medium Rate											
12	MON 100555	4 SL		0.5 lb ae/A	6"wds B		76.7 a-d	50.0 c-f	70.0 d-h	90.0 cde	76.7 c-g	84.3 fg
	Class Act	100 L		2.5 % v/v	6"wds B							
	Nonionic Surfactant	100 L		0.25 % v/v	6"wds B							
	6" weeds											
	High Rate											
13	MON 100111	5 SL		0.25 lb ae/A	3"wds A		85.3 abc	56.7 b-e	64.9 e-i	95.7 abc	71.7 e-i	90.1 b-g
	Class Act	100 L		2.5 % v/v	3"wds A							
	Nonionic Surfactant	100 L		0.25 % v/v	3"wds A							
	3" weeds											
	Low Rate											
14	MON 100111	5 SL		0.375 lb ae/A	3"wds A		80.7 a-d	69.3 abc	89.3 ab	93.3 a-d	83.7 a-e	99.7 a
	Class Act	100 L		2.5 % v/v	3"wds A							
	Nonionic Surfactant	100 L		0.25 % v/v	3"wds A							
	3" weeds											
	Medium Rate											
15	MON 100111	5 SL		0.5 lb ae/A	3"wds A		92.0 a	61.4 a-e	90.3 ab	99.0 a	86.3 a-d	95.0 abc
	Class Act	100 L		2.5 % v/v	3"wds A							
	Nonionic Surfactant	100 L		0.25 % v/v	3"wds A							
	3" weeds											
	High Rate											
16	MON 100111	5 SL		0.25 lb ae/A	6"wds B		63.3 def	42.3 d-g	48.5 ij	93.0 a-d	75.0 d-h	89.7 c-g
	Class Act	100 L		2.5 % v/v	6"wds B							
	Nonionic Surfactant	100 L		0.25 % v/v	6"wds B							
	6" weeds											
	Low Rate											
17	MON 100111	5 SL		0.375 lb ae/A	6"wds B		53.3 f	16.1 hi	58.5 f-j	98.3 ab	73.1 e-h	85.2 efg
	Class Act	100 L		2.5 % v/v	6"wds B							
	Nonionic Surfactant	100 L		0.25 % v/v	6"wds B							
	6" weeds											
	Medium Rate											
18	MON 100111	5 SL		0.5 lb ae/A	6"wds B		68.3 c-f	36.7 e-h	57.8 g-j	98.3 ab	80.0 b-g	93.3 a-e
	Class Act	100 L		2.5 % v/v	6"wds B							
	Nonionic Surfactant	100 L		0.25 % v/v	6"wds B							
	6" weeds											
	High Rate											

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

(Soy4-11)

University of Delaware

Weed Code						IPOHE	SIDSP	AMAPA	IPOHE	SIDSP	AMAPA		
Weed or Crop Name						Ivyleaf	Prickly	Palmer	Ivyleaf	Prickly	Palmer		
Weed or Crop Name						Mornngly	Sida	Amaranth	Mornngly	Sida	Amaranth		
Rating Data Type						Control	Control	Control	Control	Control	Control		
Rating Unit						%	%	%	%	%	%		
Rating Date						09/28/11	09/28/11	09/28/11	10/16/11	10/16/11	10/16/11		
Trt	Treatment	Form	Form	Rate	Grow	Appl							
No.	Name	Conc	Type	Rate	Unit	Stg	Code						
	192,4-D amine	3.8L		0.475 lb	ae/A	3"wds	A	91.7 a	85.0 a	92.0 ab	99.0 a	94.0 a	93.3 a-e
	Class Act	100L		2.5 %	v/v	3"wds	A						
	Nonionic Surfactant	100L		0.25 %	v/v	3"wds	A						
	202,4-D amine	3.8L		0.475 lb	ae/A	6"wds	B	78.3 a-d	56.6 b-e	75.5 b-f	95.3 abc	88.1 abc	94.7 a-d
	Class Act	100L		2.5 %	v/v	6"wds	B						
	Nonionic Surfactant	100L		0.25 %	v/v	6"wds	B						
	21 Untreated Check						0.0g	0.0i	0.0k	0.0f	0.0j	0.0i	
	22 Untreated Check						0.0g	0.0i	0.0k	0.0f	0.0j	0.0i	
	LSD (P=.05)						17.44	24.92	16.99	7.65	12.16	8.86	
	Standard Deviation						10.57	14.94	10.19	4.63	7.29	5.32	
	CV						15.38	32.12	15.65	5.37	10.48	6.56	
	Replicate F						7.802	12.915	1.410	1.883	1.022	5.794	
	Replicate Prob(F)						0.0013	0.0001	0.2599	0.1654	0.3704	0.0068	
	Treatment F						17.173	8.152	19.508	111.818	33.303	77.641	
	Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Efficacy of Various Dicamba Formulations						
Trial ID: Soy4-11 Cooperator: Monsanto						
Location: Field #9 Investigator: Mark VanGessel						
Weed Code	IPHOE	SIDSP	AMAPA	IPHOE	SIDSP	AMAPA
Weed or Crop Name	Ivyleaf	Prickly	Palmer	Ivyleaf	Prickly	Palmer
Weed or Crop Name	Morngrly	Sida	Amaranth	Morngrly	Sida	Amaranth
Rating Data Type	Control	Control	Control	Control	Control	Control
Rating Unit	%	%	%	%	%	%
Rating Date	09/28/11	09/28/11	09/28/11	10/16/11	10/16/11	10/16/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	
TABLE OF R MEANS						
Replicate 1	66.9	40.0	67.1	94.9	76.0	89.0
Replicate 2	77.7	42.9	71.0	93.2	75.9	91.3
Replicate 3	79.0	64.1	72.7	96.0	72.8	85.8
TABLE OF A MEANS						
1 Clarity	4 L	72.8	47.2	68.1	93.0	71.3
2 MON 100555	4 SL	76.9	52.7	74.4	94.8	75.1
3 MON 100111	5 SL	73.8	47.1	68.2	96.3	78.3
TABLE OF B MEANS						
13" weeds		84.9	65.9	83.5	95.6	78.6
26" weeds		64.1	32.0	57.0	93.8	71.2
TABLE OF C MEANS						
1 Low Rate		70.8	43.9	64.1	90.6	66.8
2 Medium Rate		74.6	50.0	70.2	96.6	76.4
3 High Rate		78.2	53.1	76.5	96.9	81.6
TABLE OF AB MEANS						
1 Clarity	4 L	84.8	69.9	84.6	93.3	74.8
13" weeds						
2 MON 100555	4 SL	84.0	65.5	84.4	97.6	80.5
13" weeds						
3 MON 100111	5 SL	86.0	62.5	81.5	96.0	80.5
13" weeds						
1 Clarity	4 L	60.9	24.4	51.7	92.7	67.8
26" weeds						
2 MON 100555	4 SL	69.8	40.0	64.4	92.1	69.8
26" weeds						
3 MON 100111	5 SL	61.7	31.7	54.9	96.6	76.0
26" weeds						

Weed Code				IPOHE	SIDSP	AMAPA	IPOHE	SIDSP	AMAPA	
Weed or Crop Name				Ivyleaf	Prickly	Palmer	Ivyleaf	Prickly	Palmer	
Weed or Crop Name				Mornglry	Sida	Amaranth	Mornglry	Sida	Amaranth	
Rating Data Type				Control	Control	Control	Control	Control	Control	
Rating Unit				%	%	%	%	%	%	
Rating Date				09/28/11	09/28/11	09/28/11	10/16/11	10/16/11	10/16/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate						
				Rate Unit						
1	Clarity 26" weeds 1 Low Rate	4 L		0.25 lb ae/A	53.3	20.0	43.3	82.6	60.0	71.7
2	MON 100555 26" weeds 1 Low Rate	4 SL		0.25 lb ae/A	57.7	26.7	60.0	87.3	63.3	83.3
3	MON 100111 26" weeds 1 Low Rate	5 SL		0.25 lb ae/A	63.3	42.3	48.5	93.0	75.0	89.7
1	Clarity 13" weeds 2 Medium Rate	4 L		0.375 lb ae/A	83.7	74.8	71.7	91.3	80.3	83.3
2	MON 100555 13" weeds 2 Medium Rate	4 SL		0.375 lb ae/A	83.7	66.7	84.9	98.3	82.0	90.7
3	MON 100111 13" weeds 2 Medium Rate	5 SL		0.375 lb ae/A	80.7	69.3	89.3	93.3	83.7	99.7
1	Clarity 26" weeds 2 Medium Rate	4 L		0.375 lb ae/A	71.0	30.0	53.3	99.1	70.0	86.0
2	MON 100555 26" weeds 2 Medium Rate	4 SL		0.375 lb ae/A	75.0	43.3	63.3	99.0	69.3	81.7
3	MON 100111 26" weeds 2 Medium Rate	5 SL		0.375 lb ae/A	53.3	16.1	58.5	98.3	73.1	85.2
1	Clarity 13" weeds 3 High Rate	4 L		0.5 lb ae/A	91.3	78.3	95.4	99.0	83.7	99.0
2	MON 100555 13" weeds 3 High Rate	4 SL		0.5 lb ae/A	82.3	68.6	87.3	99.0	89.5	97.7
3	MON 100111 13" weeds 3 High Rate	5 SL		0.5 lb ae/A	92.0	61.4	90.3	99.0	86.3	95.0
1	Clarity 26" weeds 3 High Rate	4 L		0.5 lb ae/A	58.3	23.3	58.4	96.3	73.3	84.1
2	MON 100555 26" weeds 3 High Rate	4 SL		0.5 lb ae/A	76.7	50.0	70.0	90.0	76.7	84.3
3	MON 100111 26" weeds 3 High Rate	5 SL		0.5 lb ae/A	68.3	36.7	57.8	98.3	80.0	93.3

Efficacy of Various Dicamba Formulations

Trial ID: Soy4-11 Cooperator: Monsanto

Location: Field #9 Investigator: Mark VanGessel

FACTORIAL/POOLED ERROR AOV For IPOHE Ivyleaf Mornglry Control % 09/28/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	14121.481481				
R	2	1587.703704	793.851852	6.304	0.0047	7.6
A	2	160.703704	80.351852	0.638	0.5345	7.6
B	1	5848.962963	5848.962963	46.446	0.0001	6.2
AB	2	293.814815	146.907407	1.167	0.3236	10.8
C	2	484.037037	242.018519	1.922	0.1619	7.6
AC	4	667.407407	166.851852	1.325	0.2806	13.2
BC	2	191.370370	95.685185	0.760	0.4755	10.8
ABC	4	605.851852	151.462963	1.203	0.3276	18.7
ERROR	34	4281.629630	125.930283			

FACTORIAL/POOLED ERROR AOV For SIDSP Prickly Sida Control % 09/28/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	32981.177270				
R	2	6195.454763	3097.727381	15.915	0.0001	9.5
A	2	375.785131	187.892565	0.965	0.3911	9.5
B	1	15518.877610	15518.877610	79.730	0.0001	7.8
AB	2	968.229324	484.114662	2.487	0.0981	13.4
C	2	785.108782	392.554391	2.017	0.1487	9.5
AC	4	857.589448	214.397362	1.101	0.3717	16.4
BC	2	329.154557	164.577279	0.846	0.4382	13.4
ABC	4	1333.140419	333.285105	1.712	0.1700	23.3
ERROR	34	6617.837237	194.642272			

FACTORIAL/POOLED ERROR AOV For AMAPA Palmer Amaranth Control % 09/28/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	16305.838709				
R	2	294.217167	147.108583	1.759	0.1875	6.2
A	2	466.821081	233.410541	2.791	0.0755	6.2
B	1	9463.131322	9463.131322	113.157	0.0001	5.1
AB	2	377.031644	188.515822	2.254	0.1204	8.8
C	2	1400.972552	700.486276	8.376	0.0011	6.2
AC	4	703.165351	175.791338	2.102	0.1021	10.8
BC	2	66.222996	33.111498	0.396	0.6761	8.8
ABC	4	690.912890	172.728223	2.065	0.1071	15.2
ERROR	34	2843.363705	83.628344			

FACTORIAL/POOLED ERROR AOV For IPOHE Ivyleaf Morngrly Control % 10/16/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	2097.922120				
R	2	70.445925	35.222962	1.452	0.2483	3.4
A	2	96.468107	48.234053	1.988	0.1526	3.4
B	1	45.926757	45.926757	1.893	0.1779	2.7
AB	2	90.720015	45.360007	1.870	0.1697	4.7
C	2	456.124091	228.062045	9.400	0.0006	3.4
AC	4	206.909045	51.727261	2.132	0.0982	5.8
BC	2	277.520222	138.760111	5.719	0.0072	4.7
ABC	4	28.923887	7.230972	0.298	0.8772	8.2
ERROR	34	824.884072	24.261296			

FACTORIAL/POOLED ERROR AOV For SIDSP Prickly Sida Control % 10/16/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	5707.067841				
R	2	116.527753	58.263877	1.102	0.3436	4.9
A	2	439.044068	219.522034	4.154	0.0243	4.9
B	1	746.667988	746.667988	14.128	0.0006	4.0
AB	2	87.709286	43.854643	0.830	0.4448	7.0
C	2	2038.779016	1019.389508	19.288	0.0001	4.9
AC	4	194.974414	48.743603	0.922	0.4624	8.6
BC	2	260.026012	130.013006	2.460	0.1005	7.0
ABC	4	26.398082	6.599521	0.125	0.9725	12.1
ERROR	34	1796.941223	52.851212			

FACTORIAL/POOLED ERROR AOV For AMAPA Palmer Amaranth Control % 10/16/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	3679.965515				
R	2	274.263009	137.131504	5.268	0.0102	3.5
A	2	366.453524	183.226762	7.038	0.0028	3.5
B	1	1004.328187	1004.328187	38.580	0.0001	2.8
AB	2	66.197365	33.098683	1.271	0.2934	4.9
C	2	367.145019	183.572510	7.052	0.0027	3.5
AC	4	88.349462	22.087366	0.848	0.5045	6.0
BC	2	21.619434	10.809717	0.415	0.6635	4.9
ABC	4	606.510987	151.627747	5.825	0.0011	8.5
ERROR	34	885.098528	26.032310			

Roundup + Clarity Efficacy and Timing

Trial ID: Soy5-11 Cooperator: Monsanto
 Location: Field #32 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Palmer Amaranth	AMAPA	Amaranthus palmeri S.Wats.
2.	Smooth Pigweed	AMACH	Amaranthus hybridus L.
3.	Carpetweed	MOLVE	Mollugo verticillata L.
4.	Common Ragweed	AMBEL	Ambrosia artemisifolia L.
5.	Morningglory Species	IPOSS	Ipomoea sp.

Crop 1: Non-Crop**SITE AND DESIGN**

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** FACTORIAL
Tillage Type: Disked Twice

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	06/17/11	Select Max	1	EC	16	fl oz/A
2.	06/17/11	Nonionic Surfactant			0.25	% v/v

SOIL DESCRIPTION

% Sand: 77 **% OM:** 1.3 **Texture:** sandy loam
% Silt: 12 **pH:** 5.9
% Clay: 11 **CEC:** 6.4 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05/31/11	06/09/11	06/16/11
Time of Day:	11:00 am	8:00 am	11:30 am
Application Method:	Spray	Spray	Spray
Application Timing:	3" wds	6" wds	12" wds
Applic. Placement:	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	87 F	80 F	76 F
% Relative Humidity:	55	79	44
Wind Velocity, Unit:	2 mph	1 mph	2 mph
Wind Direction:	Northeast	Southwest	Southwest
Dew Presence (Y/N):	N	N	N
Soil Temp., Unit:	85 F	79 F	75 F
Soil Surf. Moisture:	Dry	Dry	Dry
Root Zone Moisture:	Moist	Dry	Dry
Leaf Surf. Moisture:	Dry	Dry	Dry
% Cloud Cover:	40	0	70

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:	AMAPA	AMAPA	AMAPA
Growth Stage:	vegetative	vegetative	vegetative
Height, Unit:	3 in	7 in	12 in
Density, Unit:	5-200 m ²	5-200 m ²	5-200 m ²
Weed 2 Code:	AMACH	AMACH	AMACH
Growth Stage:	vegetative	vegetative	vegetative
Height, Unit:	3 in	5 in	10 in
Density, Unit:	5-20 m ²	5-20 m ²	5-20 m ²
Weed 3 Code:	MOLVE	MOLVE	MOLVE
Growth Stage:	vegetative	vegetative	vegetative
Height, Unit:	1 in	3 in	5 in
Density, Unit:	5-100 m ²	5-100 m ²	5-100 m ²
Weed 4 Code:	AMBEL	AMBEL	AMBEL
Growth Stage:	vegetative	vegetative	vegetative
Height, Unit:	2 in	5 in	8 in
Density, Unit:	0-2 m ²	0-2 m ²	0-2 m ²
Weed 5 Code:	IPOSS	IPOSS	IPOSS
Growth Stage:	cot-4 leaf	vegetative	running
Height, Unit:	2 in	5 in	10 in
Density, Unit:	0-2 m ²	0-2 m ²	0-2 m ²

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	Tractor	Tractor	Tractor
Operating Pressure:	40 psi	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	20 in	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	20 in	28 in	32 in
Ground Speed, Unit:	3 mph	3 mph	3 mph
Carrier:	water	water	water
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air	Comp. Air

Roundup + Clarity Efficacy and Timing												
Trial ID: Soy5-11 Cooperator: Monsanto												
Location: Field #32 Investigator: Mark VanGessel												
Weed Code								AMASS	ABUTH	MOLVE	AMBEL	IPOSS
Weed or Crop Name								Pigweed	Velvet-	Carpet-	Common	Morning
Weed or Crop Name								Species	leaf	weed	Ragweed	Species
Rating Data Type								Control	Control	Control	Control	Control
Rating Unit								%	%	%	%	%
Rating Date								06/19/11	06/19/11	06/19/11	06/19/11	06/19/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Stg	Appl Code					
1	Clarity.....dicamba	4 L		0.25 lb	ae/A	3"wds	A	61.7 de	54.7 d	26.7 c		75.4 bcd
	Class Act	100 L		2.5 %	v/v	3"wds	A					
	Nonionic Surfactant	100 L		0.25 %	v/v	3"wds	A					
	3" weeds											
	Low Rate											
2	Clarity.....dicamba	4 L		0.375 lb	ae/A	3"wds	A	73.3 bc	69.7 bc	46.7 b		94.0 a
	Class Act	100 L		2.5 %	v/v	3"wds	A					
	Nonionic Surfactant	100 L		0.25 %	v/v	3"wds	A					
	3" weeds											
	Medium Rate											
3	Clarity.....dicamba	4 L		0.5 lb	ae/A	3"wds	A	77.7 b	77.3 b	53.3 b		91.5 ab
	Class Act	100 L		2.5 %	v/v	3"wds	A					
	Nonionic Surfactant	100 L		0.25 %	v/v	3"wds	A					
	3" weeds											
	High Rate											
4	Clarity.....dicamba	4 L		0.25 lb	ae/A	6"wds	B	56.7 e	50.3 d	56.7 b	32.4 d	58.3 d
	Class Act	100 L		2.5 %	v/v	6"wds	B					
	Nonionic Surfactant	100 L		0.25 %	v/v	6"wds	B					
	6" weeds											
	Low Rate											
5	Clarity.....dicamba	4 L		0.375 lb	ae/A	6"wds	B	63.3 cde	59.8 cd	46.7 b	75.7 c	65.0 d
	Class Act	100 L		2.5 %	v/v	6"wds	B					
	Nonionic Surfactant	100 L		0.25 %	v/v	6"wds	B					
	6" weeds											
	Medium Rate											
6	Clarity.....dicamba	4 L		0.5 lb	ae/A	6"wds	B	69.3 bcd	59.8 cd	53.3 b	76.1 bc	71.9 cd
	Class Act	100 L		2.5 %	v/v	6"wds	B					
	Nonionic Surfactant	100 L		0.25 %	v/v	6"wds	B					
	6" weeds											
	High Rate											
7	Clarity.....dicamba	4 L		0.25 lb	ae/A	12"wds	C					
	Class Act	100 L		2.5 %	v/v	12"wds	C					
	Nonionic Surfactant	100 L		0.25 %	v/v	12"wds	C					
	12" weeds											
	Low Rate											

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							AMASS	ABUTH	MOLVE	AMBEL	IPOSS
Weed or Crop Name							Pigweed	Velvet-	Carpet-	Common	Morning
Weed or Crop Name							Species	leaf	weed	Ragweed	Species
Rating Data Type							Control	Control	Control	Control	Control
Rating Unit							%	%	%	%	%
Rating Date							06/19/11	06/19/11	06/19/11	06/19/11	06/19/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
8	Clarity.....dicamba	4 L		0.375 lb ae/A	12"wds	C					
	Class Act	100 L		2.5 % v/v	12"wds	C					
	Nonionic Surfactant	100 L		0.25 % v/v	12"wds	C					
	12" weeds										
	Medium Rate										
9	Clarity.....dicamba	4 L		0.5 lb ae/A	12"wds	C					
	Class Act	100 L		2.5 % v/v	12"wds	C					
	Nonionic Surfactant	100 L		0.25 % v/v	12"wds	C					
	12" weeds										
	High Rate										
10	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	3"wds	A	100.0 a	100.0 a	93.3 a	100.0 a	96.7 a
	Clarity.....dicamba	4 L		0.25 lb ae/A	3"wds	A					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	3"wds	A					
	3" weeds										
	Low Rate										
11	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	3"wds	A	100.0 a	100.0 a	90.0 a	92.0 abc	89.3 abc
	Clarity.....dicamba	4 L		0.375 lb ae/A	3"wds	A					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	3"wds	A					
	3" weeds										
	Medium Rate										
12	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	3"wds	A	100.0 a	100.0 a	96.7 a	92.1 abc	93.3 a
	Clarity.....dicamba	4 L		0.5 lb ae/A	3"wds	A					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	3"wds	A					
	3" weeds										
	High Rate										
13	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	6"wds	B	94.3 a	100.0 a	100.0 a	92.2 abc	84.3 abc
	Clarity.....dicamba	4 L		0.25 lb ae/A	6"wds	B					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	6"wds	B					
	6" weeds										
	Low Rate										
14	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	6"wds	B	91.7 a	93.3 a	100.0 a	92.3 abc	86.0 abc
	Clarity.....dicamba	4 L		0.375 lb ae/A	6"wds	B					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	6"wds	B					
	6" weeds										
	Medium Rate										
15	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	6"wds	B	94.3 a	92.3 a	99.0 a	90.9 abc	84.7 abc
	Clarity.....dicamba	4 L		0.5 lb ae/A	6"wds	B					
	Dry Ammonium Sulfate	100 D		1.02 % w/v	6"wds	B					
	6" weeds										
	High Rate										

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code	AMASS	ABUTH	MOLVE	AMBEL	IPOSS					
Weed or Crop Name	Pigweed	Velvet-	Carpet-	Common	Morning					
Weed or Crop Name	Species	leaf	weed	Ragweed	Species					
Rating Data Type	Control	Control	Control	Control	Control					
Rating Unit	%	%	%	%	%					
Rating Date	06/19/11	06/19/11	06/19/11	06/19/11	06/19/11					
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code				
16	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	12"wds	C				
	Clarity.....dicamba	4	L	0.25 lb ae/A	12"wds	C				
	Dry Ammonium Sulfate	100	D	1.02 % w/v	12"wds	C				
	12" weeds									
	Low Rate									
17	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	12"wds	C				
	Clarity.....dicamba	4	L	0.375 lb ae/A	12"wds	C				
	Dry Ammonium Sulfate	100	D	1.02 % w/v	12"wds	C				
	12" weeds									
	Medium Rate									
18	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	12"wds	C				
	Clarity.....dicamba	4	L	0.5 lb ae/A	12"wds	C				
	Dry Ammonium Sulfate	100	D	1.02 % w/v	12"wds	C				
	12" weeds									
	High Rate									
19	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	3"wds	A	99.8 a	99.9 a	98.2 a	92.6 ab
	2,4-D amine	3.8	L	0.475 lb ae/A	3"wds	A				
	Class Act	100	L	2.5 % v/v	3"wds	A				
	Nonionic Surfactant	100	L	0.25 % v/v	3"wds	A				
20	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	6"wds	B	94.3 a	94.0 a	100.0 a	92.7 ab
	2,4-D amine	3.8	L	0.475 lb ae/A	6"wds	B				
	Class Act	100	L	2.5 % v/v	6"wds	B				
	Nonionic Surfactant	100	L	0.25 % v/v	6"wds	B				
21	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	12"wds	C	99.6 a	99.5 a	91.2 a	99.6 a
	2,4-D amine	3.8	L	0.475 lb ae/A	12"wds	C				
	Class Act	100	L	2.5 % v/v	12"wds	C				
	Nonionic Surfactant	100	L	0.25 % v/v	12"wds	C				
22	Untreated Check						0.0 f	0.0 e	0.0 d	0.0 e
	LSD (P=.05)						10.37	10.03	19.95	16.83
	Standard Deviation						6.19	5.87	11.91	8.94
	CV						7.76	7.51	16.54	11.54
	Replicate F						0.394	0.093	1.223	19.540
	Replicate Prob(F)						0.6780	0.9114	0.3101	0.0008
	Treatment F						54.588	67.940	21.122	34.309
	Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							AMASS	ABUTH	AMBEL	IPOSS	AMASS				
Weed or Crop Name							Pigweed	Velvet-	Common	Morning	Pigweed				
Weed or Crop Name							Species	leaf	Ragweed	Species	Species				
Rating Data Type							Control	Control	Control	Control	Regrowth				
Rating Unit							%	%	%	%	%				
Rating Date							07/01/11	07/01/11	07/01/11	07/01/11	07/11/11				
Trt	Treatment	Form	Form	Rate	Grow	Appl									
No.	Name	Conc	Type	Rate	Unit	Stg	Code								
1	Clarity.....dicamba	4	L	0.25	lb ae/A	3"wds	A	50.0	f	51.0	efg	51.1	de		
	Class Act	100	L	2.5	% v/v	3"wds	A								
	Nonionic Surfactant	100	L	0.25	% v/v	3"wds	A								
	3" weeds														
	Low Rate														
2	Clarity.....dicamba	4	L	0.375	lb ae/A	3"wds	A	67.3	e	61.7	def	44.5	e		
	Class Act	100	L	2.5	% v/v	3"wds	A								
	Nonionic Surfactant	100	L	0.25	% v/v	3"wds	A								
	3" weeds														
	Medium Rate														
3	Clarity.....dicamba	4	L	0.5	lb ae/A	3"wds	A	69.3	e	53.4	efg	67.7	c		
	Class Act	100	L	2.5	% v/v	3"wds	A								
	Nonionic Surfactant	100	L	0.25	% v/v	3"wds	A								
	3" weeds														
	High Rate														
4	Clarity.....dicamba	4	L	0.25	lb ae/A	6"wds	B	53.3	f	40.7	g	60.5	f	51.2	de
	Class Act	100	L	2.5	% v/v	6"wds	B								
	Nonionic Surfactant	100	L	0.25	% v/v	6"wds	B								
	6" weeds														
	Low Rate														
5	Clarity.....dicamba	4	L	0.375	lb ae/A	6"wds	B	68.3	e	63.3	de	61.2	cd		
	Class Act	100	L	2.5	% v/v	6"wds	B								
	Nonionic Surfactant	100	L	0.25	% v/v	6"wds	B								
	6" weeds														
	Medium Rate														
6	Clarity.....dicamba	4	L	0.5	lb ae/A	6"wds	B	74.3	de	73.5	cd	67.4	c		
	Class Act	100	L	2.5	% v/v	6"wds	B								
	Nonionic Surfactant	100	L	0.25	% v/v	6"wds	B								
	6" weeds														
	High Rate														
7	Clarity.....dicamba	4	L	0.25	lb ae/A	12"wds	C	46.7	f	53.3	efg	70.0	e	51.2	de
	Class Act	100	L	2.5	% v/v	12"wds	C								
	Nonionic Surfactant	100	L	0.25	% v/v	12"wds	C								
	12" weeds														
	Low Rate														

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code Weed or Crop Name Weed or Crop Name Rating Data Type Rating Unit Rating Date							AMASS Pigweed Species Control % 07/01/11	ABUTH Velvet- leaf Control % 07/01/11	AMBEL Common Ragweed Control % 07/01/11	IPOSS Mornngly Species Control % 07/01/11	AMASS Pigweed Species Regrowth % 07/11/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
8	Clarity.....dicamba Class Act Nonionic Surfactant 12" weeds Medium Rate	4L 100L 100L		0.375 lb ae/A 2.5 % v/v 0.25 % v/v	12"wds 12"wds 12"wds	C C C	53.3 f	48.3 fg	82.6 d	66.2 c	61.1 b
9	Clarity.....dicamba Class Act Nonionic Surfactant 12" weeds High Rate	4L 100L 100L		0.5 lb ae/A 2.5 % v/v 0.25 % v/v	12"wds 12"wds 12"wds	C C C	66.7 e	63.3 de			65.0 b
10	Roundup WeatherMax..glyphosate Clarity.....dicamba Dry Ammonium Sulfate 3" weeds Low Rate	4.5 AS 4L 100 D		0.77 lb ae/A 0.25 lb ae/A 1.02 % w/v	3"wds 3"wds 3"wds	A A A	100.0 a	100.0 a	100.0 a	94.3 a	
11	Roundup WeatherMax..glyphosate Clarity.....dicamba Dry Ammonium Sulfate 3" weeds Medium Rate	4.5 AS 4L 100 D		0.77 lb ae/A 0.375 lb ae/A 1.02 % w/v	3"wds 3"wds 3"wds	A A A	100.0 a	100.0 a	100.0 a	100.0 a	
12	Roundup WeatherMax..glyphosate Clarity.....dicamba Dry Ammonium Sulfate 3" weeds High Rate	4.5 AS 4L 100 D		0.77 lb ae/A 0.5 lb ae/A 1.02 % w/v	3"wds 3"wds 3"wds	A A A	100.0 a	100.0 a	100.0 a	100.0 a	
13	Roundup WeatherMax..glyphosate Clarity.....dicamba Dry Ammonium Sulfate 6" weeds Low Rate	4.5 AS 4L 100 D		0.77 lb ae/A 0.25 lb ae/A 1.02 % w/v	6"wds 6"wds 6"wds	B B B	100.0 a	100.0 a	100.0 a	90.0 a	
14	Roundup WeatherMax..glyphosate Clarity.....dicamba Dry Ammonium Sulfate 6" weeds Medium Rate	4.5 AS 4L 100 D		0.77 lb ae/A 0.375 lb ae/A 1.02 % w/v	6"wds 6"wds 6"wds	B B B	97.3 a	94.3 ab	100.0 a	98.3 a	
15	Roundup WeatherMax..glyphosate Clarity.....dicamba Dry Ammonium Sulfate 6" weeds High Rate	4.5 AS 4L 100 D		0.77 lb ae/A 0.5 lb ae/A 1.02 % w/v	6"wds 6"wds 6"wds	B B B	95.7 ab	96.3 ab	100.0 a	99.0 a	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							AMASS	ABUTH	AMBEL	IPOSS	AMASS	
Weed or Crop Name							Pigweed	Velvet-	Common	Morning	Pigweed	
Weed or Crop Name							Species	leaf	Ragweed	Species	Species	
Rating Data Type							Control	Control	Control	Control	Regrowth	
Rating Unit							%	%	%	%	%	
Rating Date							07/01/11	07/01/11	07/01/11	07/01/11	07/11/11	
Trt	Treatment	Form	Form	Rate	Grow	Appl						
No.	Name	Conc	Type	Rate	Unit	Stg	Code					
16	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	12"wds	C		91.3 abc	77.7 c	92.6 b	74.0 bc	88.3 a
	Clarity.....dicamba	4	L	0.25 lb ae/A	12"wds	C						
	Dry Ammonium Sulfate	100	D	1.02 % w/v	12"wds	C						
	12" weeds											
	Low Rate											
17	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	12"wds	C		86.0 bc	72.7 cd	89.3 c	64.0 cd	85.0 a
	Clarity.....dicamba	4	L	0.375 lb ae/A	12"wds	C						
	Dry Ammonium Sulfate	100	D	1.02 % w/v	12"wds	C						
	12" weeds											
	Medium Rate											
18	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	12"wds	C		82.7 cd	83.3 bc	89.1 c	86.0 ab	86.7 a
	Clarity.....dicamba	4	L	0.5 lb ae/A	12"wds	C						
	Dry Ammonium Sulfate	100	D	1.02 % w/v	12"wds	C						
	12" weeds											
	High Rate											
19	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	3"wds	A		100.0 a	100.0 a	100.0 a	99.0 a	
	2,4-D amine	3.8	L	0.475 lb ae/A	3"wds	A						
	Class Act	100	L	2.5 % v/v	3"wds	A						
	Nonionic Surfactant	100	L	0.25 % v/v	3"wds	A						
20	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	6"wds	B		99.0 a	100.0 a	100.0 a	100.0 a	
	2,4-D amine	3.8	L	0.475 lb ae/A	6"wds	B						
	Class Act	100	L	2.5 % v/v	6"wds	B						
	Nonionic Surfactant	100	L	0.25 % v/v	6"wds	B						
21	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	12"wds	C		91.7 abc	94.7 ab	98.7 a	96.3 a	88.3 a
	2,4-D amine	3.8	L	0.475 lb ae/A	12"wds	C						
	Class Act	100	L	2.5 % v/v	12"wds	C						
	Nonionic Surfactant	100	L	0.25 % v/v	12"wds	C						
22	Untreated Check							0.0 g	0.0 h	0.0 g	0.0 f	
	LSD (P=.05)							10.43	14.26	2.40	14.80	11.74
	Standard Deviation							6.32	8.64	1.42	8.86	6.53
	CV							8.22	11.68	1.65	11.92	8.66
	Replicate F							4.772	2.651	3.430	3.904	3.865
	Replicate Prob(F)							0.0136	0.0843	0.0490	0.0315	0.0535
	Treatment F							48.111	27.738	996.249	25.774	15.863
	Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							ABUTH	IPOSS
Weed or Crop Name							Velvet-	Morngrly
Weed or Crop Name							leaf	Species
Rating Data Type							Regrowth	Regrowth
Rating Unit							%	%
Rating Date							07/11/11	07/11/11
Trt	Treatment	Form	Form	Rate	Grow	Appl		
No.	Name	Conc	Type	Rate	Unit	Stg	Code	
1	Clarity.....dicamba	4 L		0.25 lb ae/A	3"wds	A		
	Class Act	100 L		2.5 % v/v	3"wds	A		
	Nonionic Surfactant	100 L		0.25 % v/v	3"wds	A		
	3" weeds							
	Low Rate							
2	Clarity.....dicamba	4 L		0.375 lb ae/A	3"wds	A		
	Class Act	100 L		2.5 % v/v	3"wds	A		
	Nonionic Surfactant	100 L		0.25 % v/v	3"wds	A		
	3" weeds							
	Medium Rate							
3	Clarity.....dicamba	4 L		0.5 lb ae/A	3"wds	A		
	Class Act	100 L		2.5 % v/v	3"wds	A		
	Nonionic Surfactant	100 L		0.25 % v/v	3"wds	A		
	3" weeds							
	High Rate							
4	Clarity.....dicamba	4 L		0.25 lb ae/A	6"wds	B		
	Class Act	100 L		2.5 % v/v	6"wds	B		
	Nonionic Surfactant	100 L		0.25 % v/v	6"wds	B		
	6" weeds							
	Low Rate							
5	Clarity.....dicamba	4 L		0.375 lb ae/A	6"wds	B		
	Class Act	100 L		2.5 % v/v	6"wds	B		
	Nonionic Surfactant	100 L		0.25 % v/v	6"wds	B		
	6" weeds							
	Medium Rate							
6	Clarity.....dicamba	4 L		0.5 lb ae/A	6"wds	B		
	Class Act	100 L		2.5 % v/v	6"wds	B		
	Nonionic Surfactant	100 L		0.25 % v/v	6"wds	B		
	6" weeds							
	High Rate							
7	Clarity.....dicamba	4 L		0.25 lb ae/A	12"wds	C	53.3 b	58.0 a
	Class Act	100 L		2.5 % v/v	12"wds	C		
	Nonionic Surfactant	100 L		0.25 % v/v	12"wds	C		
	12" weeds							
	Low Rate							

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							ABUTH	IPOSS
Weed or Crop Name							Velvet-	Morninglry
Weed or Crop Name							leaf	Species
Rating Data Type							Regrowth	Regrowth
Rating Unit							%	%
Rating Date							07/11/11	07/11/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code		
8	Clarity.....dicamba	4 L		0.375 lb ae/A	12"wds	C	52.0 b	58.7 a
	Class Act	100 L		2.5 % v/v	12"wds	C		
	Nonionic Surfactant	100 L		0.25 % v/v	12"wds	C		
	12" weeds							
	Medium Rate							
9	Clarity.....dicamba	4 L		0.5 lb ae/A	12"wds	C	56.7 b	33.9 a
	Class Act	100 L		2.5 % v/v	12"wds	C		
	Nonionic Surfactant	100 L		0.25 % v/v	12"wds	C		
	12" weeds							
	High Rate							
10	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	3"wds	A		
	Clarity.....dicamba	4 L		0.25 lb ae/A	3"wds	A		
	Dry Ammonium Sulfate	100 D		1.02 % w/v	3"wds	A		
	3" weeds							
	Low Rate							
11	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	3"wds	A		
	Clarity.....dicamba	4 L		0.375 lb ae/A	3"wds	A		
	Dry Ammonium Sulfate	100 D		1.02 % w/v	3"wds	A		
	3" weeds							
	Medium Rate							
12	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	3"wds	A		
	Clarity.....dicamba	4 L		0.5 lb ae/A	3"wds	A		
	Dry Ammonium Sulfate	100 D		1.02 % w/v	3"wds	A		
	3" weeds							
	High Rate							
13	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	6"wds	B		
	Clarity.....dicamba	4 L		0.25 lb ae/A	6"wds	B		
	Dry Ammonium Sulfate	100 D		1.02 % w/v	6"wds	B		
	6" weeds							
	Low Rate							
14	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	6"wds	B		
	Clarity.....dicamba	4 L		0.375 lb ae/A	6"wds	B		
	Dry Ammonium Sulfate	100 D		1.02 % w/v	6"wds	B		
	6" weeds							
	Medium Rate							
15	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	6"wds	B		
	Clarity.....dicamba	4 L		0.5 lb ae/A	6"wds	B		
	Dry Ammonium Sulfate	100 D		1.02 % w/v	6"wds	B		
	6" weeds							
	High Rate							

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							ABUTH	IPOSS
Weed or Crop Name							Velvet-	Morngrly
Weed or Crop Name							leaf	Species
Rating Data Type							Regrowth	Regrowth
Rating Unit							%	%
Rating Date							07/11/11	07/11/11
Trt	Treatment	Form	Form	Rate	Grow	Appl		
No.	Name	Conc	Type	Rate	Unit	Stg	Code	
16	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	12"wds	C		73.3 ab
	Clarity.....dicamba	4	L	0.25 lb ae/A	12"wds	C		63.3 a
	Dry Ammonium Sulfate	100	D	1.02 % w/v	12"wds	C		
	12" weeds							
	Low Rate							
17	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	12"wds	C		63.3 b
	Clarity.....dicamba	4	L	0.375 lb ae/A	12"wds	C		65.0 a
	Dry Ammonium Sulfate	100	D	1.02 % w/v	12"wds	C		
	12" weeds							
	Medium Rate							
18	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	12"wds	C		89.3 a
	Clarity.....dicamba	4	L	0.5 lb ae/A	12"wds	C		81.7 a
	Dry Ammonium Sulfate	100	D	1.02 % w/v	12"wds	C		
	12" weeds							
	High Rate							
19	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	3"wds	A		
	2,4-D amine	3.8	L	0.475 lb ae/A	3"wds	A		
	Class Act	100	L	2.5 % v/v	3"wds	A		
	Nonionic Surfactant	100	L	0.25 % v/v	3"wds	A		
20	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	6"wds	B		
	2,4-D amine	3.8	L	0.475 lb ae/A	6"wds	B		
	Class Act	100	L	2.5 % v/v	6"wds	B		
	Nonionic Surfactant	100	L	0.25 % v/v	6"wds	B		
21	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	12"wds	C		88.5 a
	2,4-D amine	3.8	L	0.475 lb ae/A	12"wds	C		75.3 a
	Class Act	100	L	2.5 % v/v	12"wds	C		
	Nonionic Surfactant	100	L	0.25 % v/v	12"wds	C		
22	Untreated Check							
LSD (P=.05)							23.93	31.35
Standard Deviation							13.15	15.69
CV							19.32	25.19
Replicate F							1.760	1.918
Replicate Prob(F)							0.2214	0.2269
Treatment F							4.413	2.822
Treatment Prob(F)							0.0194	0.1162

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

(Soy5-11)

University of Delaware

Weed Code	University of Delaware								
Weed or Crop Name	AMASS	ABUTH	MOLVE	AMBEL	IPOSS	AMASS	ABUTH	AMBEL	
Weed or Crop Name	Pigweed	Velvet-	Carpet-	Common	Morninglry	Pigweed	Velvet-	Common	
Rating Data Type	Species	leaf	weed	Ragweed	Species	Species	leaf	Ragweed	
Rating Unit	Control	Control	Control	Control	Control	Control	Control	Control	
Rating Date	%	%	%	%	%	%	%	%	%
	06/19/11	06/19/11	06/19/11	06/19/11	06/19/11	07/01/11	07/01/11	07/01/11	07/01/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit				
1	Clarity	4L		0.25 lb ae/A					
3	12" weeds					46.7	53.3	70.0	
1	Low Rate								
2	Roundup WthrMax	4.5AS		0.77 lb ae/A					
2	Clarity	4L		0.25 lb ae/A					
3	12" weeds					91.3	77.7	92.6	
1	Low Rate								
1	Clarity	4L		0.375 lb ae/A					
13"	weeds					73.3	69.7	46.7	
2	Medium Rate								
2	Roundup WthrMax	4.5AS		0.77 lb ae/A					
2	Clarity	4L		0.375 lb ae/A					
13"	weeds					100.0	100.0	90.0	
2	Medium Rate					92.0	89.3	100.0	
1	Clarity	4L		0.375 lb ae/A					
26"	weeds					63.3	59.8	46.7	
2	Medium Rate								
2	Roundup WthrMax	4.5AS		0.77 lb ae/A					
2	Clarity	4L		0.375 lb ae/A					
26"	weeds					91.7	93.3	100.0	
2	Medium Rate					92.3	86.0	97.3	
1	Clarity	4L		0.375 lb ae/A					
312"	weeds								
2	Medium Rate					53.3	48.3	82.6	
2	Roundup WthrMax	4.5AS		0.77 lb ae/A					
2	Clarity	4L		0.375 lb ae/A					
312"	weeds								
2	Medium Rate					86.0	72.7	89.3	
1	Clarity	4L		0.5 lb ae/A					
13"	weeds					77.7	77.3	53.3	
3	High Rate								
2	Roundup WthrMax	4.5AS		0.77 lb ae/A					
2	Clarity	4L		0.5 lb ae/A					
13"	weeds					100.0	100.0	96.7	
3	High Rate					92.1	93.3	100.0	
1	Clarity	4L		0.5 lb ae/A					
26"	weeds					69.3	59.8	53.3	
3	High Rate								
2	Roundup WthrMax	4.5AS		0.77 lb ae/A					
2	Clarity	4L		0.5 lb ae/A					
26"	weeds					94.3	92.3	99.0	
3	High Rate					90.9	84.7	95.7	
1	Clarity	4L		0.5 lb ae/A					
312"	weeds								
3	High Rate					66.7	63.3		
2	Roundup WthrMax	4.5AS		0.77 lb ae/A					
2	Clarity	4L		0.5 lb ae/A					
312"	weeds								
3	High Rate					82.7	83.3	89.1	

Roundup + Clarity Efficacy and Timing					
Trial ID: Soy5-11		Cooperator: Monsanto			
Location: Field #32		Investigator: Mark VanGessel			
Weed Code		IPOSS	AMASS	ABUTH	IPOSS
Weed or Crop Name		Morngrly	Pigweed	Velvet-	Morngrly
Weed or Crop Name		Species	Species	leaf	Species
Rating Data Type		Control	Regrowth	Regrowth	Regrowth
Rating Unit		%	%	%	%
Rating Date		07/01/11	07/11/11	07/11/11	07/11/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
TABLE OF R MEANS					
Replicate 1		69.3	71.3	66.7	50.8
Replicate 2		77.0	79.5	71.7	66.4
Replicate 3		77.1	68.9	55.6	63.1
TABLE OF A MEANS					
1 Clarity	4L	57.5	59.8	54.0	50.2
2 Roundup WthrMax	4.5AS	89.5	86.7	75.3	70.0
2 Clarity	4L				
TABLE OF B MEANS					
1 3" weeds		76.3	.	.	.
2 6" weeds		77.9	.	.	.
3 12" weeds		68.3	73.2	64.7	60.1
TABLE OF C MEANS					
1 Low Rate		68.6	70.8	63.3	60.7
2 Medium Rate		72.4	73.1	57.6	61.9
3 High Rate		84.0	75.8	73.0	57.8
TABLE OF AB MEANS					
1 Clarity	4L	54.4	.	.	.
13" weeds					
2 Roundup WthrMax	4.5AS	98.1	.	.	.
2 Clarity	4L				
13" weeds					
1 Clarity	4L	59.9	.	.	.
26" weeds					
2 Roundup WthrMax	4.5AS	95.8	.	.	.
2 Clarity	4L				
26" weeds					
1 Clarity	4L	58.7	59.8	54.0	50.2
3 12" weeds					
2 Roundup WthrMax	4.5AS	74.7	86.7	75.3	70.0
2 Clarity	4L				
3 12" weeds					

University of Delaware

Weed Code	IPOSS	AMASS	ABUTH	IPOSS
Weed or Crop Name	Mornngly	Pigweed	Velvet-	Mornngly
Weed or Crop Name	Species	Species	leaf	Species
Rating Data Type	Control	Regrowth	Regrowth	Regrowth
Rating Unit	%	%	%	%
Rating Date	07/01/11	07/11/11	07/11/11	07/11/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate
				Unit
TABLE OF AC MEANS				
1	Clarity	4L	0.25 lb ae/A	51.1
1	Low Rate			53.3
2	Roundup WthrMax	4.5AS	0.77 lb ae/A	86.1
2	Clarity	4L	0.25 lb ae/A	88.3
1	Low Rate			73.3
1	Clarity	4L	0.375 lb ae/A	57.3
2	Medium Rate			61.1
2	Roundup WthrMax	4.5AS	0.77 lb ae/A	87.4
2	Clarity	4L	0.375 lb ae/A	85.0
2	Medium Rate			63.3
1	Clarity	4L	0.5 lb ae/A	67.6
3	High Rate			65.0
2	Roundup WthrMax	4.5AS	0.77 lb ae/A	95.0
2	Clarity	4L	0.5 lb ae/A	86.7
3	High Rate			89.3
TABLE OF BC MEANS				
13"	weeds			72.7
1	Low Rate			.
26"	weeds			70.6
1	Low Rate			.
3	12" weeds			62.6
1	Low Rate			70.8
13"	weeds			72.3
2	Medium Rate			.
26"	weeds			79.8
2	Medium Rate			.
3	12" weeds			65.1
2	Medium Rate			73.1
13"	weeds			83.8
3	High Rate			.
26"	weeds			83.2
3	High Rate			.
3	12" weeds			86.0
3	High Rate			75.8
TABLE OF ABC MEANS				
1	Clarity	4L	0.25 lb ae/A	51.1
13"	weeds			.
1	Low Rate			.
2	Roundup WthrMax	4.5AS	0.77 lb ae/A	94.3
2	Clarity	4L	0.25 lb ae/A	.
13"	weeds			.
1	Low Rate			.
1	Clarity	4L	0.25 lb ae/A	51.2
26"	weeds			.
1	Low Rate			.
2	Roundup WthrMax	4.5AS	0.77 lb ae/A	90.0
2	Clarity	4L	0.25 lb ae/A	.
26"	weeds			.
1	Low Rate			.

(Soy5-11)

University of Delaware

Weed Code				IPOSS	AMASS	ABUTH	IPOSS
Weed or Crop Name				Mornngly	Pigweed	Velvet-	Mornngly
Weed or Crop Name				Species	Species	leaf	Species
Rating Data Type				Control	Regrowth	Regrowth	Regrowth
Rating Unit				%	%	%	%
Rating Date				07/01/11	07/11/11	07/11/11	07/11/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate			
				Rate Unit			
1	Clarity	4L		0.25 lb ae/A	51.2	53.3	53.3
3	12" weeds						58.0
1	Low Rate						
2	Roundup WthrMax	4.5AS		0.77 lb ae/A	74.0	88.3	73.3
2	Clarity	4L		0.25 lb ae/A			63.3
3	12" weeds						
1	Low Rate						
1	Clarity	4L		0.375 lb ae/A	44.5	.	.
13"	weeds						.
2	Medium Rate						
2	Roundup WthrMax	4.5AS		0.77 lb ae/A	100.0	.	.
2	Clarity	4L		0.375 lb ae/A			.
13"	weeds						.
2	Medium Rate						
1	Clarity	4L		0.375 lb ae/A	61.2	.	.
26"	weeds						.
2	Medium Rate						
2	Roundup WthrMax	4.5AS		0.77 lb ae/A	98.3	.	.
2	Clarity	4L		0.375 lb ae/A			.
26"	weeds						.
2	Medium Rate						
1	Clarity	4L		0.375 lb ae/A	66.2	61.1	52.0
3	12" weeds						58.7
2	Medium Rate						
2	Roundup WthrMax	4.5AS		0.77 lb ae/A	64.0	85.0	63.3
2	Clarity	4L		0.375 lb ae/A			65.0
3	12" weeds						
2	Medium Rate						
1	Clarity	4L		0.5 lb ae/A	67.7	.	.
13"	weeds						.
3	High Rate						
2	Roundup WthrMax	4.5AS		0.77 lb ae/A	100.0	.	.
2	Clarity	4L		0.5 lb ae/A			.
13"	weeds						.
3	High Rate						
1	Clarity	4L		0.5 lb ae/A	67.4	.	.
26"	weeds						.
3	High Rate						
2	Roundup WthrMax	4.5AS		0.77 lb ae/A	99.0	.	.
2	Clarity	4L		0.5 lb ae/A			.
26"	weeds						.
3	High Rate						
1	Clarity	4L		0.5 lb ae/A	.	65.0	56.7
3	12" weeds						33.9
3	High Rate						
2	Roundup WthrMax	4.5AS		0.77 lb ae/A	86.0	86.7	89.3
2	Clarity	4L		0.5 lb ae/A			81.7
3	12" weeds						
3	High Rate						

Roundup + Clarity Efficacy and Timing

Trial ID: Soy5-11 Cooperator: Monsanto
 Location: Field #32 Investigator: Mark VanGessel

FACTORIAL/POOLED ERROR AOV For AMASS Pigweed Species Control % 06/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	90549.203704				
R	2	29.481481	14.740741	0.490	0.6168	3.7
A	1	5300.462963	5300.462963	176.247	0.0001	3.0
B	2	80877.148148	40438.574074	1344.633	0.0001	3.7
AB	2	2653.592593	1326.796296	44.118	0.0001	5.3
C	2	206.037037	103.018519	3.425	0.0441	3.7
AC	2	220.259259	110.129630	3.662	0.0363	5.3
BC	4	125.185185	31.296296	1.041	0.4007	6.5
ABC	4	114.518519	28.629630	0.952	0.4462	9.1
ERROR	34	1022.518519	30.074074			

FACTORIAL/POOLED ERROR AOV For ABUTH Velvet- leaf Control % 06/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	90115.344645				
R	2	1.571775	0.785887	0.044	0.9566	2.9
A	1	7637.883459	7637.883459	431.386	0.0001	2.3
B	2	76894.236443	38447.118222	2171.486	0.0001	2.9
AB	2	3895.176032	1947.588016	109.999	0.0001	4.1
C	2	161.357870	80.678935	4.557	0.0176	2.9
AC	2	440.386203	220.193102	12.436	0.0001	4.1
BC	4	243.971326	60.992831	3.445	0.0182	5.0
ABC	4	238.776408	59.694102	3.372	0.0199	7.0
ERROR	34	601.985129	17.705445			

FACTORIAL/POOLED ERROR AOV For MOLVE Carpet- weed Control % 06/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	89972.537037				
R	2	242.925926	121.462963	1.060	0.3577	7.3
A	1	14569.796296	14569.796296	127.136	0.0001	5.9
B	2	62568.481481	31284.240741	272.986	0.0001	7.3
AB	2	7315.148148	3657.574074	31.916	0.0001	10.3
C	2	177.370370	88.685185	0.774	0.4692	7.3
AC	2	112.925926	56.462963	0.493	0.6153	10.3
BC	4	575.851852	143.962963	1.256	0.3062	12.6
ABC	4	513.629630	128.407407	1.120	0.3631	17.8
ERROR	34	3896.407407	114.600218			

FACTORIAL/POOLED ERROR AOV For AMBEL Common Ragweed Control % 06/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	105347.700293				
R	2	1377.210277	688.605139	13.522	0.0001	4.9
A	1	23474.865854	23474.865854	460.978	0.0001	4.0
B	2	53818.724400	26909.362200	528.421	0.0001	4.9
AB	2	21031.891752	10515.945876	206.502	0.0001	6.9
C	2	407.295814	203.647907	3.999	0.0276	4.9
AC	2	903.141437	451.570718	8.868	0.0008	6.9
BC	4	1499.019587	374.754897	7.359	0.0002	8.4
ABC	4	1104.132758	276.033189	5.420	0.0017	11.9
ERROR	34	1731.418414	50.924071			

FACTORIAL/POOLED ERROR AOV For IPOSS Morngrly Species Control % 06/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	89098.177606				
R	2	92.300989	46.150494	0.687	0.5098	5.6
A	1	1017.420829	1017.420829	15.153	0.0004	4.6
B	2	83789.762891	41894.881445	623.966	0.0001	5.6
AB	2	936.482541	468.241270	6.974	0.0029	7.9
C	2	192.324028	96.162014	1.432	0.2528	5.6
AC	2	339.739800	169.869900	2.530	0.0946	7.9
BC	4	102.876554	25.719138	0.383	0.8192	9.7
ABC	4	344.411631	86.102908	1.282	0.2962	13.7
ERROR	34	2282.858344	67.142892			

FACTORIAL/POOLED ERROR AOV For AMASS Pigweed Species Control % 07/01/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	20864.537037				
R	2	414.037037	207.018519	4.472	0.0189	4.6
A	1	15368.907407	15368.907407	331.992	0.0001	3.8
B	2	1248.481481	624.240741	13.485	0.0001	4.6
AB	2	113.370370	56.685185	1.224	0.3065	6.5
C	2	578.037037	289.018519	6.243	0.0049	4.6
AC	2	1380.037037	690.018519	14.905	0.0001	6.5
BC	4	100.518519	25.129630	0.543	0.7053	8.0
ABC	4	87.185185	21.796296	0.471	0.7567	11.3
ERROR	34	1573.962963	46.293028			

FACTORIAL/POOLED ERROR AOV For ABUTH Velvet- leaf Control % 07/01/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	24804.835148				
R	2	509.498094	254.749047	3.405	0.0449	5.9
A	1	16619.654391	16619.654391	222.167	0.0001	4.8
B	2	1566.345622	783.172811	10.469	0.0003	5.9
AB	2	1109.890050	554.945025	7.418	0.0021	8.3
C	2	568.524300	284.262150	3.800	0.0324	5.9
AC	2	565.947920	282.973960	3.783	0.0329	8.3
BC	4	673.631843	168.407961	2.251	0.0840	10.2
ABC	4	647.903192	161.975798	2.165	0.0940	14.4
ERROR	34	2543.439736	74.807051			

FACTORIAL/POOLED ERROR AOV For AMBEL Common Ragweed Control % 07/01/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	103781.310411				
R	2	9.779709	4.889854	3.452	0.0431	0.8
A	1	72138.410191	72138.410191	50932.493	0.0001	0.7
B	2	3815.789395	1907.894697	1347.047	0.0001	0.8
AB	2	8554.798698	4277.399349	3020.008	0.0001	1.1
C	2	4569.974777	2284.987389	1613.289	0.0001	0.8
AC	2	4149.312394	2074.656197	1464.787	0.0001	1.1
BC	4	5256.653181	1314.163295	927.850	0.0001	1.4
ABC	4	5238.436046	1309.609011	924.634	0.0001	2.0
ERROR	34	48.156021	1.416354			

FACTORIAL/POOLED ERROR AOV For IPOSS Mornglry Species Control % 07/01/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	37214.477288				
R	2	635.128885	317.564443	4.929	0.0132	5.5
A	1	19871.252545	19871.252545	308.434	0.0001	4.5
B	2	4906.715919	2453.357959	38.080	0.0001	5.5
AB	2	191.832740	95.916370	1.489	0.2400	7.7
C	2	128.912832	64.456416	1.000	0.3783	5.5
AC	2	960.491877	480.245938	7.454	0.0021	7.7
BC	4	2652.139658	663.034915	10.291	0.0001	9.5
ABC	4	5677.509572	1419.377393	22.031	0.0001	13.4
ERROR	34	2190.493259	64.426272			

FACTORIAL/POOLED ERROR AOV For AMASS Pigweed Species Regrowth % 07/11/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	68525.533322				
R	2	123.510288	61.755144	3.759	0.0335	2.8
A	1	1081.532967	1081.532967	65.833	0.0001	2.3
B	2	64370.465304	32185.232652	1959.128	0.0001	2.8
AB	2	2163.065935	1081.532967	65.833	0.0001	3.9
C	2	25.102883	12.551442	0.764	0.4736	2.8
AC	2	51.028802	25.514401	1.553	0.2262	3.9
BC	4	50.205766	12.551442	0.764	0.5560	4.8
ABC	4	102.057603	25.514401	1.553	0.2092	6.8
ERROR	34	558.563774	16.428346			

FACTORIAL/POOLED ERROR AOV For ABUTH Velvet- leaf Regrowth % 07/11/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	55103.204523				
R	2	268.755408	134.377704	2.955	0.0656	4.6
A	1	683.561600	683.561600	15.032	0.0005	3.7
B	2	50170.492990	25085.246495	551.646	0.0001	4.6
AB	2	1367.123199	683.561600	15.032	0.0001	6.5
C	2	241.032067	120.516033	2.650	0.0852	4.6
AC	2	114.692335	57.346167	1.261	0.2963	6.5
BC	4	482.064133	120.516033	2.650	0.0500	8.0
ABC	4	229.384670	57.346167	1.261	0.3043	11.2
ERROR	34	1546.098122	45.473474			

FACTORIAL/POOLED ERROR AOV For IPOSS Mornglry Species Regrowth % 07/11/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	53	48426.360839				
R	2	272.382934	136.191467	3.800	0.0324	4.1
A	1	586.476105	586.476105	16.365	0.0003	3.3
B	2	43363.367048	21681.683524	605.007	0.0001	4.1
AB	2	1172.952210	586.476105	16.365	0.0001	5.8
C	2	17.533001	8.766501	0.245	0.7844	4.1
AC	2	586.707507	293.353753	8.186	0.0013	5.8
BC	4	35.066003	8.766501	0.245	0.9109	7.1
ABC	4	1173.415013	293.353753	8.186	0.0001	10.0
ERROR	34	1218.461018	35.837089			

Early Postemergence Cadet in Soybeans

Trial ID: Soy6-11 Cooperator: FMC
 Location: Field #3 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Morningglory Species	IPOSS	Ipomoea sp.

Crop 1: Soybean **GLXMA** **Variety:** H458N
Planting Date: 05/18/11 **Planting Method:** Row- Unit Planter **Depth:** 1 in
Rate: 4 Sd/row-ft **Row Spacing:** 15 in **Seed Bed:** Firm/Trashy
Soil Temperature: 70 F **Soil Moisture:** Moist **Emergence Date:** 05/25/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Soybean Stubble

SOIL DESCRIPTION

% Sand: 79 **% OM:** 2.1 **Texture:** sandy loam
% Silt: 10 **pH:** 5.6
% Clay: 11 **CEC:** 7.2 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	05/05/11	05/31/11
Time of Day:	9:30 am	10:15 am
Application Method:	Spray	Spray
Application Timing:	14EPP	1-2"wds
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	53 F	86 F
% Relative Humidity:	52	58
Wind Velocity, Unit:	6 mph	2 mph
Wind Direction:	West	Northeast
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	51 F	84 F
Soil Surf. Moisture:	Moist	Dry
Root Zone Moisture:	Wet	Moist
Leaf Surf. Moisture:	Moist	Dry
% Cloud Cover:	0	40

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code:	GLXMA	GLXMA
Growth Stage:		unifoliate
Height, Unit:		3 in
Crop Health:		deerDam

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	IPOSS	IPOSS
Growth Stage:		cot-1 leaf
Height, Unit:		1 in
Density,Unit:		0-3 m2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	20 in	20 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air

Trial Comments

6/17/11 - Postemergence morningglory control was excellent. Ratings based on newly emerged plants. This rating is residual activity. IPOSS is mostly pitted morningglory. A few ivyleaf morningglory are present.

6/8/11 - New flush of morningglory is in the cotyledon stage.
Due to deer feeding, stunting is difficult to rate.
Cadet POST caused some flecking and leaf burn.

Early Postemergence Cadet in Soybeans							GLXMA Soybean	AMASS Pigweed Species Control %	IPOSS Morngrly Species Control %	AMASS Pigweed Species Control %	AMBEL Common Ragweed Control %
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Stunting %	Control %	Control %	Control %	Control %
							06/01/11	06/08/11	06/08/11	06/17/11	06/17/11
1	Untreated Check						0.0b	0.0b	0.0b	0.0b	0.0b
	Gramoxone Inteon..paraquat	2	SL	0.75 lb ai/A	14EPP	A					
	2,4-D ester	3.8	L	0.475 lb ae/A	14EPP	A					
	Nonionic Surfactant	100	L	0.25 % v/v	14EPP	A					
2	Valor XLT Premix	40.3	WG	0.0378 lb ai/A	14EPP	A	0.0b	100.0a	100.0a	100.0a	100.0a
	Gramoxone Inteon..paraquat	2	SL	0.75 lb ai/A	14EPP	A					
	2,4-D ester	3.8	L	0.475 lb ae/A	14EPP	A					
	Nonionic Surfactant	100	L	0.25 % v/v	14EPP	A					
	Roundup PowerMax..glyphosate	4.5	AS	1.12 lb ae/A	1-2"wds	B					
	Dry Ammonium Sulfate	100	D	1.5 % w/v	1-2"wds	B					
3	Valor XLT Premix	40.3	WG	0.0378 lb ai/A	14EPP	A	0.0b	100.0a	100.0a	100.0a	100.0a
	Gramoxone Inteon..paraquat	2	SL	0.75 lb ai/A	14EPP	A					
	2,4-D ester	3.8	L	0.475 lb ae/A	14EPP	A					
	Nonionic Surfactant	100	L	0.25 % v/v	14EPP	A					
	Resource.....flumiclorac	0.86	EC	0.0134 lb ai/A	1-2"wds	B					
	Roundup PowerMax..glyphosate	4.5	AS	1.12 lb ae/A	1-2"wds	B					
	Dry Ammonium Sulfate	100	D	1.5 % w/v	1-2"wds	B					
4	Valor XLT Premix	40.3	WG	0.0378 lb ai/A	14EPP	A	0.0b	100.0a	100.0a	100.0a	100.0a
	Gramoxone Inteon..paraquat	2	SL	0.75 lb ai/A	14EPP	A					
	2,4-D ester	3.8	L	0.475 lb ae/A	14EPP	A					
	Nonionic Surfactant	100	L	0.25 % v/v	14EPP	A					
	Cadet.....fluthiacet	0.91	EC	.00427 lb ai/A	1-2"wds	B					
	Roundup PowerMax..glyphosate	4.5	AS	1.12 lb ae/A	1-2"wds	B					
	Dry Ammonium Sulfate	100	D	1.5 % w/v	1-2"wds	B					
5	Prefix Premix	5.3	E	1.33 lb ai/A	14EPP	A	2.3b	100.0a	100.0a	100.0a	100.0a
	Gramoxone Inteon..paraquat	2	SL	0.75 lb ai/A	14EPP	A					
	2,4-D ester	3.8	L	0.475 lb ae/A	14EPP	A					
	Nonionic Surfactant	100	L	0.25 % v/v	14EPP	A					
	Cadet.....fluthiacet	0.91	EC	.00427 lb ai/A	1-2"wds	B					
	Roundup PowerMax..glyphosate	4.5	AS	1.12 lb ae/A	1-2"wds	B					
	Dry Ammonium Sulfate	100	D	1.5 % w/v	1-2"wds	B					
6	Authority MTZ Premix	45	DF	0.337 lb ai/A	14EPP	A	0.0b	100.0a	100.0a	100.0a	100.0a
	Dual II Magnum..s-metolachlor	7.64	E	0.955 lb ai/A	14EPP	A					
	Gramoxone Inteon..paraquat	2	SL	0.75 lb ai/A	14EPP	A					
	2,4-D ester	3.8	L	0.475 lb ae/A	14EPP	A					
	Nonionic Surfactant	100	L	0.25 % v/v	14EPP	A					
	Cadet.....fluthiacet	0.91	EC	.00427 lb ai/A	1-2"wds	B					
	Roundup PowerMax..glyphosate	4.5	AS	1.12 lb ae/A	1-2"wds	B					
	Dry Ammonium Sulfate	100	D	1.5 % w/v	1-2"wds	B					

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

							GLXMA	AMASS	IPOSS	AMASS	AMBEL
							Soybean	Pigweed	Morngrly	Pigweed	Common
							Stunting	Species	Species	Species	Ragweed
							%	Control	Control	Control	Control
							%	%	%	%	%
							06/01/11	06/08/11	06/08/11	06/17/11	06/17/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
7	Authority XL Premix	70	DG	0.175	lb ai/A	14EPP	A	6.7 a	100.0 a	100.0 a	100.0 a
	Gramoxone Inteon..paraquat	2	SL	0.75	lb ai/A	14EPP	A				
	2,4-D ester	3.8	L	0.475	lb ae/A	14EPP	A				
	Nonionic Surfactant	100	L	0.25	% v/v	14EPP	A				
	Cadet.....fluthiacet	0.91	EC	.00427	lb ai/A	1-2"wds	B				
	Roundup PowerMax..glyphosate	4.5	AS	1.12	lb ae/A	1-2"wds	B				
	Dry Ammonium Sulfate	100	D	1.5	w/v	1-2"wds	B				
8	Valor XLT Premix	40.3	WG	0.0378	lb ai/A	14EPP	A	0.0 b	70.0 a	100.0 a	100.0 a
	Gramoxone Inteon..paraquat	2	SL	0.75	lb ai/A	14EPP	A				
	2,4-D ester	3.8	L	0.475	lb ae/A	14EPP	A				
	Nonionic Surfactant	100	L	0.25	% v/v	14EPP	A				
	Roundup PowerMax..glyphosate	4.5	AS	1.12	lb ae/A	1-2"wds	B				
	Firstrate.....cloransulam	84	WG	0.0157	lb ai/A	1-2"wds	B				
	Dry Ammonium Sulfate	100	D	1.5	w/v	1-2"wds	B				
LSD (P=.05)							4.21	32.18	0.00	0.00	0.00
Standard Deviation							2.41	18.37	0.00	0.00	0.00
CV							213.92	21.94	0.0	0.0	0.0
Replicate F							1.576	1.000	0.000	0.000	0.000
Replicate Prob(F)							0.2415	0.3927	1.0000	1.0000	1.0000
Treatment F							2.942	11.159	0.000	0.000	0.000
Treatment Prob(F)							0.0407	0.0001	1.0000	1.0000	1.0000

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							IPOLA	DIGSA	AMAPA	IPOSS
Crop Code							Pitted	Large	Palmer	Mornglry
Weed or Crop Name							Mornglry	Crabgras	Amaranth	Species
Weed or Crop Name							Control	Control	Control	Control
Rating Data Type							%	%	%	%
Rating Unit							06/17/11	06/17/11	07/05/11	07/05/11
Rating Date										
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg				
1	Untreated Check						0.0 d	0.0 b	0.0 b	0.0 c
	Gramoxone Inteon..paraquat	2	SL	0.75 lb ai/A	14EPP	A				
	2,4-D ester	3.8	L	0.475 lb ae/A	14EPP	A				
	Nonionic Surfactant	100	L	0.25 % v/v	14EPP	A				
2	Valor XLT Premix	40.3	WG	0.0378 lb ai/A	14EPP	A	77.0 ab	100.0 a	100.0 a	50.0 ab
	Gramoxone Inteon..paraquat	2	SL	0.75 lb ai/A	14EPP	A				
	2,4-D ester	3.8	L	0.475 lb ae/A	14EPP	A				
	Nonionic Surfactant	100	L	0.25 % v/v	14EPP	A				
	Roundup PowerMax..glyphosate	4.5	AS	1.12 lb ae/A	1-2"wds	B				
	Dry Ammonium Sulfate	100	D	1.5 % w/v	1-2"wds	B				
3	Valor XLT Premix	40.3	WG	0.0378 lb ai/A	14EPP	A	80.0 a	100.0 a	100.0 a	56.7 a
	Gramoxone Inteon..paraquat	2	SL	0.75 lb ai/A	14EPP	A				
	2,4-D ester	3.8	L	0.475 lb ae/A	14EPP	A				
	Nonionic Surfactant	100	L	0.25 % v/v	14EPP	A				
	Resource.....flumiclorac	0.86	EC	0.0134 lb ai/A	1-2"wds	B				
	Roundup PowerMax..glyphosate	4.5	AS	1.12 lb ae/A	1-2"wds	B				
	Dry Ammonium Sulfate	100	D	1.5 % w/v	1-2"wds	B				
4	Valor XLT Premix	40.3	WG	0.0378 lb ai/A	14EPP	A	72.7 abc	100.0 a	100.0 a	50.0 ab
	Gramoxone Inteon..paraquat	2	SL	0.75 lb ai/A	14EPP	A				
	2,4-D ester	3.8	L	0.475 lb ae/A	14EPP	A				
	Nonionic Surfactant	100	L	0.25 % v/v	14EPP	A				
	Cadet.....fluthiacet	0.91	EC	.00427 lb ai/A	1-2"wds	B				
	Roundup PowerMax..glyphosate	4.5	AS	1.12 lb ae/A	1-2"wds	B				
	Dry Ammonium Sulfate	100	D	1.5 % w/v	1-2"wds	B				
5	Prefix Premix	5.3	E	1.33 lb ai/A	14EPP	A	67.7 c	100.0 a	100.0 a	40.0 b
	Gramoxone Inteon..paraquat	2	SL	0.75 lb ai/A	14EPP	A				
	2,4-D ester	3.8	L	0.475 lb ae/A	14EPP	A				
	Nonionic Surfactant	100	L	0.25 % v/v	14EPP	A				
	Cadet.....fluthiacet	0.91	EC	.00427 lb ai/A	1-2"wds	B				
	Roundup PowerMax..glyphosate	4.5	AS	1.12 lb ae/A	1-2"wds	B				
	Dry Ammonium Sulfate	100	D	1.5 % w/v	1-2"wds	B				
6	Authority MTZ Premix	45	DF	0.337 lb ai/A	14EPP	A	69.3 bc	100.0 a	100.0 a	53.3 a
	Dual II Magnum..s-metolachlor	7.64	E	0.955 lb ai/A	14EPP	A				
	Gramoxone Inteon..paraquat	2	SL	0.75 lb ai/A	14EPP	A				
	2,4-D ester	3.8	L	0.475 lb ae/A	14EPP	A				
	Nonionic Surfactant	100	L	0.25 % v/v	14EPP	A				
	Cadet.....fluthiacet	0.91	EC	.00427 lb ai/A	1-2"wds	B				
	Roundup PowerMax..glyphosate	4.5	AS	1.12 lb ae/A	1-2"wds	B				
	Dry Ammonium Sulfate	100	D	1.5 % w/v	1-2"wds	B				

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

							IPOLA	DIGSA	AMAPA	IPOSS	
							Pitted	Large	Palmer	Morning	
							Morning	Crab	Amaranth	Species	
							Control	Control	Control	Control	
							%	%	%	%	
							06/17/11	06/17/11	07/05/11	07/05/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code				
7	Authority XL Premix	70	DG	0.175	lb ai/A	14EPP	A	70.0 bc	100.0 a	100.0 a	50.0 ab
	Gramoxone Inteon..paraquat	2	SL	0.75	lb ai/A	14EPP	A				
	2,4-D ester	3.8	L	0.475	lb ae/A	14EPP	A				
	Nonionic Surfactant	100	L	0.25	% v/v	14EPP	A				
	Cadet.....fluthiacet	0.91	EC	.00427	lb ai/A	1-2"wds	B				
	Roundup PowerMax..glyphosate	4.5	AS	1.12	lb ae/A	1-2"wds	B				
	Dry Ammonium Sulfate	100	D	1.5	% w/v	1-2"wds	B				
8	Valor XLT Premix	40.3	WG	0.0378	lb ai/A	14EPP	A	70.7 bc	100.0 a	100.0 a	46.7 ab
	Gramoxone Inteon..paraquat	2	SL	0.75	lb ai/A	14EPP	A				
	2,4-D ester	3.8	L	0.475	lb ae/A	14EPP	A				
	Nonionic Surfactant	100	L	0.25	% v/v	14EPP	A				
	Roundup PowerMax..glyphosate	4.5	AS	1.12	lb ae/A	1-2"wds	B				
	Firstrate.....cloransulam	84	WG	0.0157	lb ai/A	1-2"wds	B				
	Dry Ammonium Sulfate	100	D	1.5	% w/v	1-2"wds	B				
LSD (P=.05)							8.12	0.00	0.00	11.14	
Standard Deviation							4.63	0.00	0.00	6.36	
CV							7.31	0.0	0.0	14.68	
Replicate F							9.224	0.000	0.000	2.882	
Replicate Prob(F)							0.0028	1.0000	1.0000	0.0895	
Treatment F							94.131	0.000	0.000	24.471	
Treatment Prob(F)							0.0001	1.0000	1.0000	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Zidua Efficacy in No-Till Soybeans

Trial ID: Soy7-11 Cooperator: BASF
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Soybean **GLXMA** **Variety:** H418N
Planting Date: 05/12/11 **Planting Method:** Row- Unit Planter **Depth:** 1 in
Rate: 4 **Sd/row-ft** **Row Spacing:** 15 in **Seed Bed:** Medium/Trashy
Soil Temperature: 74 **F** **Soil Moisture:** Moist **Emergence Date:** 05/20/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Corn Stubble

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	06/17/11	Roundup WeatherMax	4.5	AS	22	fl oz/A

SOIL DESCRIPTION

% Sand: 79 **% OM:** 1.5 **Texture:** loamy sand
% Silt: 14 **pH:** 6.0
% Clay: 7 **CEC:** 5.2 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	05/03/11
Time of Day:	10:00 am
Application Method:	Spray
Application Timing:	0-14EPP
Applic. Placement:	Brdcst
Air Temp., Unit:	75 F
% Relative Humidity:	66
Wind Velocity, Unit:	4 mph
Wind Direction:	Southwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	73 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	30

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

6/3/11 - Heavy deer feeding so injury ratings are not possible.

Zidua Efficacy in No-Till Soybeans							GLXMA Soybean	AMAPA	DIGSA	AMAPA	IPOSS	
Trial ID: Soy7-11 Cooperator: BASF								Palmer Amaranth	Large Crabgrass	Palmer Amaranth	Morngrly Species	
Location: Field #14 Investigator: Mark VanGessel							Stunting %	Control %	Control %	Control %	Control %	
Weed Code							05/25/11	06/03/11	06/03/11	06/13/11	06/13/11	
Crop Code												
Weed or Crop Name												
Weed or Crop Name												
Rating Data Type												
Rating Unit												
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Grow Stg	Appl Code					
1	Untreated Check							0.0 b	0.0 e	0.0 b	0.0 e	0.0 d
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A					
	Methylated Seed Oil	100	L	1 %	v/v	0-14EPP	A					
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A					
2	Zidua.....pyroxasulfone	85	WG	0.106 lb	ai/A	0-14EPP	A	0.0 b	90.0 abc	100.0 a	76.7 bc	46.7 b
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A					
	Methylated Seed Oil	100	L	1 %	v/v	0-14EPP	A					
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A					
3	Zidua.....pyroxasulfone	85	WG	0.08 lb	ai/A	0-14EPP	A	0.0 b	86.0 bcd	100.0 a	79.3 b	43.3 b
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A					
	Methylated Seed Oil	100	L	1 %	v/v	0-14EPP	A					
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A					
4	Zidua.....pyroxasulfone	85	WG	0.212 lb	ai/A	0-14EPP	A	28.3 a	100.0 a	100.0 a	93.7 a	40.0 b
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A					
	Methylated Seed Oil	100	L	1 %	v/v	0-14EPP	A					
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A					
5	Dual II Magnum..s-metolachlor	7.64	E	0.955 lb	ai/A	0-14EPP	A	0.0 b	77.7 d	100.0 a	60.0 d	23.3 c
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A					
	Methylated Seed Oil	100	L	1 %	v/v	0-14EPP	A					
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A					
6	Valor SX.....flumioxazin	51	WG	0.064 lb	ai/A	0-14EPP	A	0.0 b	81.0 cd	100.0 a	70.0 c	40.0 b
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A					
	Methylated Seed Oil	100	L	1 %	v/v	0-14EPP	A					
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A					
7	Zidua.....pyroxasulfone	85	WG	0.08 lb	ai/A	0-14EPP	A	0.0 b	96.7 a	93.3 a	90.7 a	46.7 b
	Valor SX.....flumioxazin	51	WG	0.064 lb	ai/A	0-14EPP	A					
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A					
	Methylated Seed Oil	100	L	1 %	v/v	0-14EPP	A					
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A					
8	Authority First Premix	70	DF	0.131 lb	ai/A	0-14EPP	A	3.3 b	91.7 ab	100.0 a	78.3 b	75.0 a
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A					
	Methylated Seed Oil	100	L	1 %	v/v	0-14EPP	A					
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A					
LSD (P=.05)							3.88	10.16	7.15	7.18	14.74	
Standard Deviation							2.22	5.80	4.08	4.10	8.42	
CV							55.98	7.45	4.71	5.98	21.37	
Replicate F							1.485	1.586	1.000	0.241	0.529	
Replicate Prob(F)							0.2601	0.2395	0.3927	0.7894	0.6003	
Treatment F							60.091	93.202	221.714	157.420	19.359	
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Zidua Two-Pass Efficacy in No-Till Soybeans

Trial ID: Soy8-11 Cooperator: BASF
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Common Ragweed	AMBEL	Ambrosia artemisifolia L.
2.	Common Lambsquarters	CHEAL	Chenopodium album L.
3.	Palmer Amaranth	AMAPA	Amaranthus palmeri S.Wats.
4.	Morningglory Species	IPOSS	Ipomoea sp.
5.	Crabgrass Species	DIGSS	Digitaria sp.

Crop 1: Soybean **GLXMA** **Variety:** H418N
Planting Date: 05/12/11 **Planting Method:** Row- Unit Planter **Depth:** 1 in
Rate: 4 Sd/row-ft **Row Spacing:** 15 in **Seed Bed:** Medium/Trashy
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/20/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Corn Stubble

SOIL DESCRIPTION

% Sand: 79 **% OM:** 1.5 **Texture:** loamy sand
% Silt: 14 **pH:** 6.0
% Clay: 7 **CEC:** 5.2 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	05/03/11	06/06/11
Time of Day:	10:00 am	10:15 am
Application Method:	Spray	Spray
Application Timing:	0-14EPP	24DAP
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	75 F	72 F
% Relative Humidity:	66	73
Wind Velocity, Unit:	4 mph	1 mph
Wind Direction:	Southwest	Northwest
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	73 F	70 F
Soil Surf. Moisture:	Dry	Dry
Root Zone Moisture:	Moist	Moist
Leaf Surf. Moisture:	Dry	Dry
% Cloud Cover:	30	30

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code:	GLXMA	GLXMA
Growth Stage:		2-3 Trifol
Height, Unit:		5 in
Crop Health:		Damaged

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	AMBEL	AMBEL
Growth Stage:		6-8 leaf
Height, Unit:		3.5 in
Density, Unit:		5-20 m ²
Weed 2 Code:	CHEAL	CHEAL
Growth Stage:		Vegetative
Height, Unit:		7 in
Density, Unit:		10-70 m ²
Weed 3 Code:	AMAPA	AMAPA
Growth Stage:		Vegetative
Height, Unit:		4 in
Density, Unit:		0-10 m ²
Weed 4 Code:	IPOSS	IPOSS
Growth Stage:		Vegetative
Height, Unit:		4 in
Density, Unit:		0-15 m ²
Weed 5 Code:	DIGSS	DIGSS
Growth Stage:		3-4 tiller
Height, Unit:		4 in
Density, Unit:		0-10 m ²

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	20 in	22 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air

Trial Comments

5/25/11 - No soybean injury observed.

6/3/11 - No injury ratings due to heavy deer feeding.

6/6/11 - Some deer damage at 24DAP application timing.

6/13/11 - Injury most pronounced on young tissue emerging from lower stem nodes. There were a few plants that were chewed off by deer and plants are recovering. Injury is due to leaf crinkling at youngest leaf.

Zidua Two-Pass Efficacy in No-Till Soybeans							AMAPA	GLXMA	AMAPA	IPOSS	
Trial ID: Soy8-11 Cooperator: BASF							Palmer	Soybean	Palmer	Mornglry	
Location: Field #14 Investigator: Mark VanGessel							Amaranth	Injury	Amaranth	Species	
Weed Code							Control	%	Control	Control	
Crop Code							%	%	%	%	
Weed or Crop Name							06/03/11	06/13/11	06/23/11	06/23/11	
Weed or Crop Name											
Rating Data Type											
Rating Unit											
Rating Date											
Trt	Treatment	Form	Form	Rate	Grow	Appl					
No.	Name	Conc	Type	Rate	Unit	Stg	Code				
1	Untreated Check							0.0 d	0.0 c	83.3 c	70.0 b
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A				
	Methylated Seed Oil	100	L	1 %	v/v	0-14EPP	A				
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	24DAP	B				
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	24DAP	B				
2	Zidua.....pyroxasulfone	85	WG	0.106 lb	ai/A	0-14EPP	A	83.3 c	0.0 c	93.3 b	66.0 b
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A				
	Methylated Seed Oil	100	L	1 %	v/v	0-14EPP	A				
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	24DAP	B				
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	24DAP	B				
3	Zidua.....pyroxasulfone	85	WG	0.08 lb	ai/A	0-14EPP	A		9.7 b	97.3 ab	73.7 ab
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A				
	Methylated Seed Oil	100	L	1 %	v/v	0-14EPP	A				
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A				
	Zidua.....pyroxasulfone	85	WG	0.053 lb	ai/A	24DAP	B				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	24DAP	B				
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	24DAP	B				
4	Valor SX.....flumioxazin	51	WG	0.064 lb	ai/A	0-14EPP	A	89.3 b	22.3 a	100.0 a	68.3 b
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A				
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A				
	Warrant.....acetochlor	3	CS	0.94 lb	ai/A	24DAP	B				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	24DAP	B				
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	24DAP	B				
5	Zidua.....pyroxasulfone	85	WG	0.08 lb	ai/A	0-14EPP	A	98.0 a	21.7 a	100.0 a	83.7 a
	Valor SX.....flumioxazin	51	WG	0.064 lb	ai/A	0-14EPP	A				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A				
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A				
	Warrant.....acetochlor	3	CS	0.94 lb	ae/A	24DAP	B				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	24DAP	B				
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	24DAP	B				
6	Valor SX.....flumioxazin	51	WG	0.064 lb	ai/A	0-14EPP	A	84.3 c	15.0 b	100.0 a	82.0 a
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	0-14EPP	A				
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	0-14EPP	A				
	Dual II Magnum..s-metolachlor	7.64	E	0.94 lb	ai/A	24DAP	B				
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb	ae/A	24DAP	B				
	Dry Ammonium Sulfate	100	D	2.04 %	w/v	24DAP	B				
LSD (P=.05)							4.10	5.83	5.94	10.16	
Standard Deviation							2.18	3.20	3.27	5.59	
CV							3.07	27.98	3.41	7.56	
Replicate F							4.211	0.948	3.250	2.911	
Replicate Prob(F)							0.0563	0.4198	0.0818	0.1009	
Treatment F							1016.211	29.300	12.188	5.182	
Treatment Prob(F)							0.0001	0.0001	0.0005	0.0132	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Zidua Efficacy in Conventional Tillage Soybeans

Trial ID: Soy9-11 Cooperator: BASF
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Soybean **GLXMA** **Variety:** H418N
Planting Date: 05/12/11 **Planting Method:** Row- Unit Planter **Depth:** 1 in
Rate: 4 **Sd/row-ft** **Row Spacing:** 15 in **Seed Bed:** Smooth
Soil Temperature: 74 **F** **Soil Moisture:** Moist **Emergence Date:** 05/20/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Chisel Plowed, Disked & Field Cultivated

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	06/17/11	Roundup WeatherMax	4.5	AS	22	fl oz/A

SOIL DESCRIPTION

% Sand: 79 **% OM:** 1.5 **Texture:** loamy sand
% Silt: 14 **pH:** 6.0
% Clay: 7 **CEC:** 5.2 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	05/13/11
Time of Day:	8:45 am
Application Method:	Spray
Application Timing:	PRE
Applic. Placement:	Brdcst
Air Temp., Unit:	59 F
% Relative Humidity:	85
Wind Velocity, Unit:	2 mph
Wind Direction:	East
Dew Presence (Y/N):	N
Soil Temp., Unit:	57 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	N/A
% Cloud Cover:	90

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trail Comments

5/26/11 - Emergence is uneven making injury assesment difficult.

6/6/11 - No injury rating due to heavy deer feeding

Zidua Efficacy in Conventional Tillage Soybeans										
Trial ID: Soy9-11		Cooperator: BASF								
Location: Field #14		Investigator: Mark VanGessel								
Weed Code	Crop Code	GLXMA Soybean	AMAPA Palmer Amaranth Control %	AMAPA Palmer Amaranth Control %	AMBEL Common Ragweed Control %	CHEAL Common Lambqtrs Control %	IPOSS Morngrly Species Control %	Rating Data Type	Rating Unit	Rating Date
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg				
1	Untreated Check									
2	Zidua.....pyroxasulfone	85 WG		0.08 lb ai/A	PRE		0.0 b	0.0 b	0.0 d	0.0 e
3	Zidua.....pyroxasulfone	85 WG		0.106 lb ai/A	PRE		0.0 b	100.0 a	100.0 a	76.7 c
4	Zidua.....pyroxasulfone	85 WG		0.212 lb ai/A	PRE		0.0 b	100.0 a	100.0 a	81.7 bc
5	Dual II Magnum..s-metolachlor	7.64 E		0.955 lb ai/A	PRE		0.0 b	98.0 a	80.0 c	0.0 e
6	Valor SX.....flumioxazin	51 WG		0.064 lb ai/A	PRE		8.3 a	100.0 a	100.0 a	90.0 ab
7	Prefix Premix	5.3 E		1.33 lb ai/A	PRE		0.0 b	100.0 a	100.0 a	93.3 ab
8	Zidua.....pyroxasulfone	85 WG		0.08 lb ai/A	PRE		6.7 a	100.0 a	100.0 a	96.7 a
	Valor SX.....flumioxazin	51 WG		0.064 lb ai/A	PRE					
9	Authority First Premix	70 DF		0.131 lb ai/A	PRE		3.3 ab	95.0 a	86.7 bc	85.0 abc
10	Dual II Magnum..s-metolachlor	7.64 E		1.24 lb ai/A	PRE		0.0 b	100.0 a	94.0 ab	0.0 e
	LSD (P=.05)						5.84	5.20	12.70	12.78
	Standard Deviation						3.40	3.03	7.40	7.45
	CV						185.57	3.41	8.7	13.07
	Replicate F						1.800	0.395	2.338	1.668
	Replicate Prob(F)						0.1938	0.6791	0.1251	0.2165
	Treatment F						2.632	319.365	51.604	93.850
	Treatment Prob(F)						0.0385	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Zidua Two-Pass Efficacy in Conventional Tillage Soybeans

Trial ID: Soy10-11 Cooperator: BASF
 Location: Field #14 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Common Ragweed	AMBEL	Ambrosia artemisifolia L.
2.	Common Lambsquarters	CHEAL	Chenopodium album L.
3.	Palmer Amaranth	AMAPA	Amaranthus palmeri S.Wats.
4.	Morningglory Species	IPOSS	Ipomoea sp.

Crop 1: Soybean **GLXMA** **Variety:** H418N
Planting Date: 05/12/11 **Planting Method:** Row- Unit Planter **Depth:** 1 in
Rate: 4 Sd/row-ft **Row Spacing:** 15 in **Seed Bed:** Smooth
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/20/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Chisel Plowed, Disked & Field Cultivated

SOIL DESCRIPTION

% Sand: 79 **% OM:** 1.5 **Texture:** loamy sand
% Silt: 14 **pH:** 6.0
% Clay: 7 **CEC:** 5.2 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	05/13/11	06/06/11
Time of Day:	8:45 am	10:15 am
Application Method:	Spray	Spray
Application Timing:	PRE	24DAP
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	59 F	72 F
% Relative Humidity:	85	73
Wind Velocity, Unit:	2 mph	1 mph
Wind Direction:	East	Northwest
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	57 F	70 F
Soil Surf. Moisture:	Dry	Dry
Root Zone Moisture:	Moist	Moist
Leaf Surf. Moisture:	N/A	Dry
% Cloud Cover:	90	30

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code:	GLXMA	GLXMA
Growth Stage:		2-3 Trifol
Height, Unit:		5 in
Crop Health:		Damaged

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	AMBEL	AMBEL
Growth Stage:		4-6 leaf
Height, Unit:		4 in
Density,Unit:		0-10 m2
Weed 2 Code:	CHEAL	CHEAL
Growth Stage:		Vegetative
Height, Unit:		4 in
Density,Unit:		0-70 m2
Weed 3 Code:	AMAPA	AMAPA
Growth Stage:		Vegetative
Height, Unit:		6 in
Density,Unit:		0-100 m2
Weed 4 Code:	IPOSS	IPOSS
Growth Stage:		Vegetative
Height, Unit:		4 in
Density,Unit:		20-50 m2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	20 in	22 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air

Trial Comments

5/26/11 - Emergence is uneven making it difficult to rate injury

6-3-11 - No injury ratings due to heavy feeding by deer.

6-6-11 - Some deer damage to soybeans at 24DAP application.

Zidua Two-Pass Efficacy in Conventional Tillage Soybeans									
Trial ID: Soy10-11 Cooperator: BASF									
Location: Field #14 Investigator: Mark VanGessel									
Weed Code	GLXMA Soybean	AMAPA Palmer Amaranth	GLXMA Soybean	GLXMA Soybean	AMAPA Palmer Amaranth	IPOSS Morngrly Species			
Crop Code	Stunting %	Control %	Injury %	Stunting %	Control %	Control %			
Weed or Crop Name	05/26/11	06/03/11	06/13/11	06/23/11	06/23/11	06/23/11			
Weed or Crop Name	05/26/11	06/03/11	06/13/11	06/23/11	06/23/11	06/23/11			
Rating Data Type	Stunting %	Control %	Injury %	Stunting %	Control %	Control %			
Rating Unit	05/26/11	06/03/11	06/13/11	06/23/11	06/23/11	06/23/11			
Rating Date	05/26/11	06/03/11	06/13/11	06/23/11	06/23/11	06/23/11			
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg				
1	Untreated Check								
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A 24DAP					
	Dry Ammonium Sulfate	100 D		2.04 % w/v 24DAP					
2	Zidua.....pyroxasulfone	85 WG		0.106 lb ai/A PRE					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A 24DAP					
	Dry Ammonium Sulfate	100 D		2.04 % w/v 24DAP					
3	Zidua.....pyroxasulfone	85 WG		0.08 lb ai/A PRE					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A 24DAP					
	Dry Ammonium Sulfate	100 D		2.04 % w/v 24DAP					
4	Zidua.....pyroxasulfone	85 WG		0.08 lb ai/A PRE					
	Zidua.....pyroxasulfone	85 WG		0.053 lb ai/A 24DAP					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A 24DAP					
	Dry Ammonium Sulfate	100 D		2.04 % w/v 24DAP					
5	Zidua.....pyroxasulfone	85 WG		0.106 lb ai/A PRE					
	Zidua.....pyroxasulfone	85 WG		0.053 lb ai/A 24DAP					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A 24DAP					
	Dry Ammonium Sulfate	100 D		2.04 % w/v 24DAP					
6	Valor SX.....flumioxazin	51 WG		0.064 lb ai/A PRE					
	Dual II Magnum..s-metolachlor	7.64 E		0.955 lb ai/A 24DAP					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A 24DAP					
	Dry Ammonium Sulfate	100 D		2.04 % w/v 24DAP					
7	Valor SX.....flumioxazin	51 WG		0.064 lb ai/A PRE					
	Prefix Premix	5.3 E		1.33 lb ai/A 24DAP					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A 24DAP					
	Dry Ammonium Sulfate	100 D		2.04 % w/v 24DAP					
8	Zidua.....pyroxasulfone	85 WG		0.08 lb ai/A PRE					
	Valor SX.....flumioxazin	51 WG		0.064 lb ai/A PRE					
	Dual II Magnum..s-metolachlor	7.64 E		0.955 lb ai/A 24DAP					
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A 24DAP					
	Dry Ammonium Sulfate	100 D		2.04 % w/v 24DAP					
LSD (P=.05)				3.58	2.21	2.58	1.79	4.51	6.18
Standard Deviation				2.04	1.26	1.47	1.02	2.57	3.53
CV				489.9	1.46	17.87	23.11	2.66	4.88
Replicate F				1.000	17.657	4.200	1.000	0.497	0.656
Replicate Prob(F)				0.3927	0.0001	0.0373	0.3927	0.6188	0.5342
Treatment F				1.000	2293.538	83.759	113.440	30.245	24.875
Treatment Prob(F)				0.4706	0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Morninglory Control in Soybeans

Trial ID: Soy11-11 Cooperator:
 Location: Field #9 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Palmer Amaranth	AMAPA	Amaranthus palmeri S.Wats.
2.	Ivyleaf Morningglory	IPOHE	Ipomoea hederacea (L.) Jacq.
3.	Pitted Morningglory	IPOLA	Ipomoea lacunosa L.

Crop 1: Non-Crop

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

SOIL DESCRIPTION

% Sand: 83 **% OM:** 1.4 **Texture:** loamy sand
% Silt: 8 **pH:** 5.4
% Clay: 9 **CEC:** 6.1 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.1 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	07/12/11
Time of Day:	10:00 am
Application Method:	Spray
Application Timing:	POST
Applic. Placement:	Brdcst
Air Temp., Unit:	89 F
% Relative Humidity:	52
Wind Velocity, Unit:	3 mph
Wind Direction:	Northwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	86 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	20

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	AMAPA
Growth Stage:	vegetative
Height, Unit:	9 in
Density,Unit:	0-150 m2
Weed 2 Code:	IPOHE
Growth Stage:	veg-run
Height, Unit:	8 in
Density,Unit:	20-100 m2
Weed 3 Code:	IPOLA
Growth Stage:	running
Height, Unit:	12 in
Density,Unit:	0-3 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	30 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

7/12/11 - Weed size was quite variable; Palmer amaranth 2-17", Ivyleaf MG 3-12", Pitted MG 8-24".

7/24/11 - In the border area, strips were sprayed with paraquat alone, paraquat plus metribuzin, and glyphosate plus callisto.

Paraquat alone and paraquat+metribuzin were 100% for morningglory and Palmer amaranth. Glyphosate plus Callisto was 75% for Palmer amaranth and 85% for morningglory species.

Morninglory Control in Soybeans										
Trial ID: Soy11-11 Cooperator:										
Location: Field #9 Investigator: Mark VanGessel										
Weed Code						IPOHE	AMAPA	IPOSS	AMAPA	IPOSS
Weed or Crop Name						Ivyleaf	Palmer	Morninglry	Palmer	Morninglry
Weed or Crop Name						Morninglry	Amaranth	Species	Amaranth	Species
Rating Data Type						Control	Control	Control	Control	Control
Rating Unit						%	%	%	%	%
Rating Date						07/28/11	07/18/11	07/18/11	07/24/11	07/24/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg					
1	Untreated Check					0.0e	0.0c	0.0d	0.0c	0.0e
2	Touchdown HiTech..glyphosate Nonionic Surfactant	5 SL 100 L		0.78 lb ae/A 0.25 % v/v	POST POST	35.7 cd	91.7 a	46.7 c	100.0 a	63.3 d
3	Touchdown HiTech..glyphosate LI-700	5 SL 100 L		0.78 lb ae/A 0.25 % v/v	POST POST	35.7 cd	95.7 a	56.7 c	100.0 a	65.0 d
4	Touchdown HiTech..glyphosate Induce NIS	5 SL 100 L		0.78 lb ae/A 0.25 % v/v	POST POST	29.0 d	96.2 a	50.0 c	100.0 a	58.3 d
5	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A	POST	28.3 d	95.7 a	55.0 c	100.0 a	63.3 d
6	Roundup WeatherMax..glyphosate	4.5 AS		1 lb ae/A	POST	33.3 d	96.3 a	50.0 c	100.0 a	63.3 d
7	Roundup WeatherMax..glyphosate HE-111	4.5 AS 100 L		0.77 lb ae/A 0.625 % v/v	POST POST	30.7 d	93.7 a	56.7 c	100.0 a	56.7 d
8	Roundup WeatherMax..glyphosate Cadet.....fluthiacet	4.5 AS 0.91 EC		0.77 lb ae/A 0.0064 lb ai/A	POST POST	45.0 bc	84.3 b	74.3 ab	93.3 b	75.0 c
9	Roundup WeatherMax..glyphosate Resource.....flumiclorac	4.5 AS 0.86 EC		0.77 lb ae/A 0.0403 lb ai/A	POST POST	71.3 a	95.7 a	80.0 ab	100.0 a	85.3 ab
10	Roundup WeatherMax..glyphosate Reflex.....fomesafen	4.5 AS 2 L		0.77 lb ae/A 0.375 lb ai/A	POST POST	75.3 a	94.0 a	86.0 a	97.3 ab	88.3 a
11	Flexstar GT Premix	3.3 L		1.87 lb ai/A	POST	75.7 a	97.0 a	83.7 ab	100.0 a	86.7 a
12	Flexstar GT Premix	3.3 L		1.25 lb ai/A	POST	49.7 b	92.3 a	71.7 b	93.3 b	76.7 bc
LSD (P=.05)						10.01	5.44	12.30	6.64	9.45
Standard Deviation						5.91	3.19	7.27	3.92	5.58
CV						13.92	3.71	12.27	4.34	8.57
Replicate F						0.215	2.320	0.727	1.237	1.260
Replicate Prob(F)						0.8079	0.1241	0.4947	0.3098	0.3034
Treatment F						43.491	219.245	30.977	159.314	52.607
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Improved Glyphosate Efficacy with HE-111

Trial ID: Soy12-11 Cooperator:
 Location: Field #7 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Horseweed	ERICA	Erigeron canadensis L.
2.	Field Pansy	VIORA	Viola rafinesquii Greene

Crop 1: Soybean **GLXMA** **Variety:** H458N
Planting Date: 05/18/11 **Planting Method:** Row- Unit Planter **Depth:** 1 in
Rate: 4 Sd/row-ft **Row Spacing:** 15 in **Seed Bed:** Firm/Trashy
Soil Temperature: 70 F **Soil Moisture:** Moist **Emergence Date:** 05/25/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage

SOIL DESCRIPTION

% Sand: 78 **% OM:** 1.9 **Texture:** sandy loam
% Silt: 13 **pH:** 5.5
% Clay: 9 **CEC:** 5.7 **Fert. Level:** Medium

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.2 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	05/13/11
Time of Day:	1:45 pm
Application Method:	Spray
Application Timing:	Preplant
Applic. Placement:	Brdcst
Air Temp., Unit:	69 F
% Relative Humidity:	57
Wind Velocity, Unit:	1 mph
Wind Direction:	Southeast
Dew Presence (Y/N):	N
Soil Temp., Unit:	68 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	20

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	ERICA
Growth Stage:	bolting
Height, Unit:	5 in
Density, Unit:	0-60 m2
Weed 2 Code:	VIORA
Growth Stage:	flower
Height, Unit:	9 in
Density, Unit:	0-80 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	22 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Improved Glyphosate Efficacy with HE-111									
Trial ID: Soy12-11 Cooperator:									
Location: Field #7 Investigator: Mark VanGessel									
Weed Code						ERICA	VIORA	ERICA	
Weed or Crop Name						Horse-	Field	Horse-	
Weed or Crop Name						weed	Pansy	weed	
Rating Data Type						Control	Control	Control	
Rating Unit						%	%	%	
Rating Date						05/25/11	05/25/11	06/05/11	
Trt	Treatment	Form	Form	Rate	Grow				
No.	Name	Conc	Type	Rate	Unit	Stg			
1	Untreated Check						0.0 c	0.0 d	0.0 c
2	Roundup PowerMax..glyphosate	4.5 AS		0.5 lb ae/A	Preplant		31.7 b	40.0 c	53.3 b
3	Roundup PowerMax..glyphosate HE-111	4.5 AS	100 L	0.625 % v/v	Preplant		33.3 b	50.0 bc	60.0 ab
4	Roundup PowerMax..glyphosate	4.5 AS		0.75 lb ae/A	Preplant		33.3 b	50.0 bc	60.0 ab
5	Roundup PowerMax..glyphosate HE-111	4.5 AS	100 L	0.625 % v/v	Preplant		53.3 a	56.7 b	63.3 ab
6	Roundup PowerMax..glyphosate Valor XLT Premix	4.5 AS	40.3 WG	0.083 lb ai/A	Preplant		56.7 a	85.0 a	74.3 a
LSD (P=.05)							12.17	11.34	17.84
Standard Deviation							6.69	6.24	9.81
CV							19.26	13.28	18.92
Replicate F							1.522	1.000	0.127
Replicate Prob(F)							0.2649	0.4019	0.8825
Treatment F							27.460	58.836	21.593
Treatment Prob(F)							0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Preemergence Weed Control with Fierce in Soybeans

Trial ID: Soy20-11 Cooperator: Valent
 Location: Field #35 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Soybean **GLXMA** **Variety:** H418N
Planting Date: 05/12/11 **Planting Method:** Row- Unit Planter **Depth:** 1 in
Rate: 4 Sd/row-ft **Row Spacing:** 15 in **Seed Bed:** Firm/Trashy
Soil Temperature: 74 F **Soil Moisture:** Moist **Emergence Date:** 05/20/11

SITE AND DESIGN

Plot Width, Unit: 20 FT **Plot Length, Unit:** 325 FT **Reps:** 1
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Corn Stubble

SOIL DESCRIPTION

% Sand: 82 **% OM:** 1.2 **Texture:** loamy sand
% Silt: 11 **pH:** 6.0
% Clay: 7 **CEC:** 5.8 **Fert. Level:** Medium

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.1 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	05/12/11	06/21/11
Time of Day:	5:00 pm	9:00 am
Application Method:	Spray	Spray
Application Timing:	PRE	V4-5
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	71 F	68 F
% Relative Humidity:	50	84
Wind Velocity, Unit:	1 mph	0 mph
Wind Direction:	Southeast	N/A
Dew Presence (Y/N):	N	Y
Soil Temp., Unit:	71 F	67 F
Soil Surf. Moisture:	Dry	Moist
Root Zone Moisture:	Moist	Moist
Leaf Surf. Moisture:	Dry	Moist
% Cloud Cover:	45	100

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code:	GLXMA	GLXMA
Growth Stage:		V5
Height, Unit:		10 in
Crop Health:		Good

APPLICATION EQUIPMENT		
	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	29 psi
Nozzle Type:	AIRMIX	AITEEJET
Nozzle Size:	11002	11005
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	18 Nozl
Boom Height, Unit:	20 in	30 in
Ground Speed, Unit:	3 mph	5 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	25 gpa
Propellant:	Comp. Air	Pump

Trial Comments

Demonstration was not replicated, but weed control ratings based on observations in at least three spots for each treatment.

5/25/11 - Emergence of beans is good, no injury observed.

6/4/11 - Few to no summer annuals have emerged due to dry weather.

6/16/11 - Both treatments were poor on morningglory, but density was not very consistent.

Weed Code	ERICA	OEOLA	GERCA	GLXMA	DIGSA						
Crop Code				Soybean							
Weed or Crop Name	Horse-weed	Cutleaf	Carolina		Large						
Weed or Crop Name	Control	EPrimse	Geranium	Stunting	Crabgras						
Rating Data Type	%	Control	Control	%	Control						
Rating Unit	%	%	%	%	%						
Rating Date	05/25/11	05/25/11	05/25/11	06/04/11	06/04/11						
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Untreated Check						40.0	20.0	40.0	0.0	0.0
2	Fierce Premix	76	WG	0.142 lb ai/A	PRE	A	60.0	60.0	60.0	15.0	97.0
	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	PRE	A					
	Dry Ammonium Sulfate	100	D	1.5 % w/v	PRE	A					
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	42DAT	B					
	Dry Ammonium Sulfate	100	D	1.5 % w/v	42DAT	B					
3	Prefix Premix	5.3	E	1.33 lb ai/A	PRE	A	50.0	75.0	70.0	0.0	85.0
	Roundup WeatherMax..glyphosate	4.5	AS	0.77 lb ae/A	PRE	A					
	Dry Ammonium Sulfate	100	D	1.5 % w/v	PRE	A					
	Roundup PowerMax..glyphosate	4.5	AS	0.77 lb ae/A	42DAT	B					
	Dry Ammonium Sulfate	100	D	1.5 % w/v	42DAT	B					

Preemergence Weed Control with Fierce in Soybeans										
Trial ID: Soy20-11		Cooperator: Valent								
Location: Field #35		Investigator: Mark VanGessel								
Weed Code	ERICA	OEOLA	AMAPA	DIGSA	ERICA					
Crop Code										
Weed or Crop Name	Horse-weed Control	Cutleaf EPrimrse Control	Palmer Amaranth Control	Large Crabgrass Control	Horse-weed Control					
Weed or Crop Name	%	%	%	%	%					
Rating Data Type	06/04/11	06/04/11	06/16/11	06/16/11	06/16/11					
Rating Unit										
Rating Date										
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Grow Stg	Appl Code			
1	Untreated Check							0.0	0.0	0.0
2	Fierce Premix	76 WG		0.142 lb ai/A		PRE	A	60.0	85.0	100.0
	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A		PRE	A			
	Dry Ammonium Sulfate	100 D		1.5 % w/v		PRE	A			
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A		42DAT	B			
	Dry Ammonium Sulfate	100 D		1.5 % w/v		42DAT	B			
3	Prefix Premix	5.3 E		1.33 lb ai/A		PRE	A	70.0	70.0	93.0
	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A		PRE	A			
	Dry Ammonium Sulfate	100 D		1.5 % w/v		PRE	A			
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A		42DAT	B			
	Dry Ammonium Sulfate	100 D		1.5 % w/v		42DAT	B			

Weed Code	OEOLA	GERCA								
Crop Code										
Weed or Crop Name	Cutleaf EPrimrse Control	Carolina Geranium Control								
Weed or Crop Name	%	%								
Rating Data Type	06/16/11	06/16/11								
Rating Unit										
Rating Date										
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Grow Stg	Appl Code			
1	Untreated Check							0.0	0.0	
2	Fierce Premix	76 WG		0.142 lb ai/A		PRE	A	45.0	50.0	
	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A		PRE	A			
	Dry Ammonium Sulfate	100 D		1.5 % w/v		PRE	A			
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A		42DAT	B			
	Dry Ammonium Sulfate	100 D		1.5 % w/v		42DAT	B			
3	Prefix Premix	5.3 E		1.33 lb ai/A		PRE	A	35.0	80.0	
	Roundup WeatherMax..glyphosate	4.5 AS		0.77 lb ae/A		PRE	A			
	Dry Ammonium Sulfate	100 D		1.5 % w/v		PRE	A			
	Roundup PowerMax..glyphosate	4.5 AS		0.77 lb ae/A		42DAT	B			
	Dry Ammonium Sulfate	100 D		1.5 % w/v		42DAT	B			

Common Lambsquarters and Velvetleaf Control in Snap Beans

Trial ID: Bean3-11 Cooperator: PA Vegetable Growers
 Location: Field #18 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Morningglory Species	IPOSS	Ipomoea sp.
2.	Common Lambsquarters	CHEAL	Chenopodium album L.
3.	Common Ragweed	AMBEL	Ambrosia artemisifolia L.

Crop 1: Snap Bean **PHSVN** **Variety:** Dart
Planting Date: 06/15/11 **Planting Method:** Row- Unit Planter **Depth:** 0.75 in
Rate: 4 Sd/row-ft **Row Spacing:** 30 in **Seed Bed:** Smooth
Soil Temperature: 79 F **Soil Moisture:** Moist **Emergence Date:** 06/20/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

SOIL DESCRIPTION

% Sand: 81 **% OM:** 1.3 **Texture:** loamy sand
% Silt: 12 **pH:** 5.7
% Clay: 7 **CEC:** 4.6 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.4 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	06/15/11	07/07/11
Time of Day:	3:30 pm	1:00 pm
Application Method:	Spray	Spray
Application Timing:	PRE	POST
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	79 F	91 F
% Relative Humidity:	35	50
Wind Velocity, Unit:	5 mph	1 mph
Wind Direction:	Northwest	West
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	78 F	90 F
Soil Surf. Moisture:	Dry	Moist
Root Zone Moisture:	Moist	Moist
Leaf Surf. Moisture:	N/A	Dry
% Cloud Cover:	10	5

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code:	PHSVN	PHSVN
Growth Stage:		3-4 trifol
Height, Unit:		8 in
Crop Health:		Good

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	IPOSS	IPOSS
Growth Stage:		veg-run
Height, Unit:		6 in
Density,Unit:		4-8 m2
Weed 2 Code:	CHEAL	CHEAL
Growth Stage:		vegetative
Height, Unit:		3 in
Density,Unit:		4-10 m2
Weed 3 Code:	AMBEL	AMBEL
Growth Stage:		vegetative
Height, Unit:		3 in
Density,Unit:		0-4 m2

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	Tractor	Tractor
Operating Pressure:	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	18 in	24 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air

Trial Comments

6/27/11 No injury was observed from PRE treatments. Poor bean stand observed in plot 208 and 301.

7/05/11 - Only PRE treatments applied.

7/7/11 - Palmer Amaranth was in the weedy checks only.

7/12/11 - Treatment 3 had signs of puckering and very little leafburn. Treatments 5, and 12 through 14 had signs of chlorosis

7/22/11 - Grass control was excellent

8/03/11 - Plot 101, No beans.

Plot 102 row 2 was missing the row.

Plot 208 was missing 1/2 the row.

Plot 210, No beans.

Plot 314, No beans.

Common Lambsquarters and Velvetleaf Control in Snap Beans

Trial ID: Bean3-11 Cooperator: PA Vegetable Growers

Location: Field #18 Investigator: Mark VanGessel

Weed Code						PHSVN	AMAPA	IPOSS	MOLVE	AMBEL	CHEAL	
Crop Code						Snap	Palmer	Morninglry	Carpet-	Common	Common	
Weed or Crop Name						Bean	Amaranth	Species	weed	Ragweed	Lambqtrs	
Weed or Crop Name						Injury	Control	Control	Control	Control	Control	
Rating Data Type						%	%	%	%	%	%	
Rating Unit												
Rating Date						07/05/11	07/05/11	07/05/11	07/05/11	07/05/11	07/05/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code						
1	Untreated Check						0.0 b	0.0 b	0.0 c	0.0 b	0.0 c	0.0 c
2	Dual Magnum.....s-metolachlor Reflex.....fomesafen	7.62E 2L		1.19 lb ai/A 0.312 lb ai/A	PRE PRE	A A	10.7 a	100.0 a	53.3 b	100.0 a	100.0 a	93.3 a
3	Dual Magnum.....s-metolachlor Reflex.....fomesafen Nonionic Surfactant	7.62E 2L 100L		1.19 lb ai/A 0.25 lb ai/A 0.25 % v/v	PRE Post Post	A B B	0.0 b	100.0 a	10.0 c	100.0 a	45.5 b	46.7 b
4	Dual Magnum.....s-metolachlor Sanda.....halosulfuron	7.62E 75DF		1.19 lb ai/A 0.0314 lb ai/A	PRE PRE	A A	13.3 a	100.0 a	70.0 a	100.0 a	100.0 a	100.0 a
5	Dual Magnum.....s-metolachlor Sanda.....halosulfuron Nonionic Surfactant	7.62E 75DF 100L		1.19 lb ai/A 0.0314 lb ai/A 0.25 % v/v	PRE Post Post	A B B	0.0 b	100.0 a	10.0 c	100.0 a	26.7 b	43.3 b
6	Dual Magnum.....s-metolachlor Reflex.....fomesafen Sanda.....halosulfuron Nonionic Surfactant	7.62E 2L 75DF 100L		1.19 lb ai/A 0.312 lb ai/A 0.0314 lb ai/A 0.25 % v/v	PRE PRE Post Post	A A B B	12.2 a	100.0 a	56.7 b	100.0 a	100.0 a	100.0 a
8	Dual Magnum.....s-metolachlor Sanda.....halosulfuron Reflex.....fomesafen Nonionic Surfactant	7.62E 75DF 2L 100L		1.19 lb ai/A 0.0314 lb ai/A 0.25 lb ai/A 0.25 % v/v	PRE PRE Post Post	A A B B	11.3 a	100.0 a	79.3 a	100.0 a	100.0 a	100.0 a
	LSD (P=.05)						4.25	0.00	12.98	0.00	23.77	15.69
	Standard Deviation						2.37	0.00	7.29	0.00	12.31	8.82
	CV						34.85	0.0	18.28	0.0	18.25	12.77
	Replicate F						0.295	0.000	14.073	0.000	0.894	0.429
	Replicate Prob(F)						0.7499	1.0000	0.0007	1.0000	0.4511	0.6610
	Treatment F						21.974	0.000	59.228	0.000	36.077	60.388
	Treatment Prob(F)						0.0001	1.0000	0.0001	1.0000	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							GGGAN	PHSVN	PHSVN	PHSVN	AMAPA	CHEAL
Crop Code							Annual	PHSVN	PHSVN	PHSVN	Palmer	Common
Weed or Crop Name							Grasses	Snap	Snap	Snap	Amaranth	Lambqtrs
Weed or Crop Name							Control	Bean	Bean	Bean	Control	Control
Rating Data Type							%	Injury	Stunting	Stunting	%	%
Rating Unit							07/05/11	07/12/11	07/18/11	07/22/11	07/22/11	07/22/11
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code						
1	Untreated Check						0.0 b		0.0 c	0.0 d	0.0 b	2.1 d
2	Dual Magnum.....s-metolachlor Reflex.....fomesafen	7.62E 2L		1.19 lb ai/A 0.312 lb ai/A	PRE PRE	A A	100.0 a		0.0 c	3.3 bcd	100.0 a	100.0 a
3	Dual Magnum.....s-metolachlor Reflex.....fomesafen Nonionic Surfactant	7.62E 2L 100L		1.19 lb ai/A 0.25 lb ai/A 0.25 % v/v	PRE Post Post	A B B	100.0 a	8.0 e	0.0 c	1.7 cd	100.0 a	53.3 b
4	Dual Magnum.....s-metolachlor Sanda.....halosulfuron	7.62E 75DF		1.19 lb ai/A 0.0314 lb ai/A	PRE PRE	A A	100.0 a		6.0 bc	9.6 ab	100.0 a	100.0 a
5	Dual Magnum.....s-metolachlor Sanda.....halosulfuron Nonionic Surfactant	7.62E 75DF 100L		1.19 lb ai/A 0.0314 lb ai/A 0.25 % v/v	PRE Post Post	A B B	100.0 a	23.3 ab	6.3 bc	0.0 d	100.0 a	30.0 c
6	Dual Magnum.....s-metolachlor Reflex.....fomesafen Sanda.....halosulfuron Nonionic Surfactant	7.62E 2L 75DF 100L		1.19 lb ai/A 0.312 lb ai/A 0.0314 lb ai/A 0.25 % v/v	PRE PRE Post Post	A A B B	100.0 a	20.7 bc	15.7 a	11.7 a	100.0 a	100.0 a
7	Dual Magnum.....s-metolachlor Reflex.....fomesafen Sanda.....halosulfuron LI-700	7.62E 2L 75DF 100L		1.19 lb ai/A 0.312 lb ai/A 0.0314 lb ai/A 0.25 % v/v	PRE PRE Post Post	A A B B		25.0 a	15.7 a	14.0 a	100.0 a	100.0 a
8	Dual Magnum.....s-metolachlor Sanda.....halosulfuron Reflex.....fomesafen Nonionic Surfactant	7.62E 75DF 2L 100L		1.19 lb ai/A 0.0314 lb ai/A 0.25 lb ai/A 0.25 % v/v	PRE PRE Post Post	A A B B	100.0 a	8.0 e	10.7 ab	14.0 a	100.0 a	100.0 a
9	Dual Magnum.....s-metolachlor Basagran.....bentazon Raptor.....imazamox Nonionic Surfactant 30% Urea Ammonium Nitrate	7.62E 4L 1AS 100L 100L		1.19 lb ai/A 0.75 lb ai/A 0.0312 lb ai/A 0.25 % v/v 2.5 % v/v	PRE Post Post Post Post	A B B B B		17.0 cd	11.3 ab	13.3 a	100.0 a	91.7 a
10	Dual Magnum.....s-metolachlor Basagran.....bentazon Raptor.....imazamox Nonionic Surfactant	7.62E 4L 1AS 100L		1.19 lb ai/A 0.75 lb ai/A 0.0312 lb ai/A 0.25 % v/v	PRE Post Post Post	A B B B		16.3 d	8.3 ab	4.7 bcd	100.0 a	100.0 a

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							GGGAN	PHSVN	PHSVN	PHSVN	AMAPA	CHEAL
Crop Code							Annual	Snap	Snap	Snap	Palmer	Common
Weed or Crop Name							Grasses	Bean	Bean	Bean	Amaranth	Lambqtrs
Weed or Crop Name							Control	Injury	Stunting	Stunting	Control	Control
Rating Data Type							%	%	%	%	%	%
Rating Unit							07/05/11	07/12/11	07/18/11	07/22/11	07/22/11	07/22/11
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code						
11	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE	A		16.3 d	8.0 b	8.0 abc	100.0 a	100.0 a
	Basagran.....bentazon	4L		0.75 lb ai/A	Post	B						
	Raptor.....imazamox	1 AS		0.0312 lb ai/A	Post	B						
	LI-700	100L		0.25 % v/v	Post	B						
12	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE	A		15.7 d	12.0 ab	13.3 a	100.0 a	100.0 a
	Basagran.....bentazon	4L		0.75 lb ai/A	Post	B						
	Reflex.....fomesafen	2L		0.187 lb ai/A	Post	B						
	Nonionic Surfactant	100L		0.25 % v/v	Post	B						
	30% Urea Ammonium Nitrate	100L		2.5 % v/v	Post	B						
13	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE	A		16.3 d	8.0 b	11.7 a	96.7 a	99.0 a
	Basagran.....bentazon	4L		0.75 lb ai/A	Post	B						
	Reflex.....fomesafen	2L		0.187 lb ai/A	Post	B						
	Nonionic Surfactant	100L		0.25 % v/v	Post	B						
14	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE	A		16.7 cd	11.7 ab	9.0 ab	96.7 a	90.0 a
	Basagran.....bentazon	4L		0.75 lb ai/A	Post	B						
	Reflex.....fomesafen	2L		0.187 lb ai/A	Post	B						
	LI-700	100L		0.25 % v/v	Post	B						
LSD (P=.05)							0.00	4.07	7.38	6.95	3.52	13.06
Standard Deviation							0.00	2.39	4.37	4.13	2.10	7.75
CV							0.0	14.34	53.84	50.62	2.27	9.31
Replicate F							0.000	2.138	0.035	0.893	2.167	0.451
Replicate Prob(F)							1.0000	0.1441	0.9656	0.4221	0.1348	0.6423
Treatment F							0.000	14.787	4.398	4.865	483.500	49.624
Treatment Prob(F)							1.0000	0.0001	0.0010	0.0004	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							IPOSS	AMASS	IPOSS	CHEAL	PHSVN	PHSVN
Crop Code							Morngrly	Pigweed	Morngrly	Common	Snap	Snap
Weed or Crop Name							Species	Species	Species	Lambqtrs	Bean	Bean
Weed or Crop Name							Control	Control	Control	Control	Gaps	Fresh Wt
Rating Data Type							%	%	%	%	ft/plot	lb/plot
Rating Unit							07/22/11	08/01/11	08/01/11	08/01/11	08/03/11	08/03/11
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code					
1	Untreated Check							0.0f	0.0b	0.0c	0.0c	
2	Dual Magnum.....s-metolachlor Reflex.....fomesafen	7.62E 2L		1.19 lb ai/A 0.312 lb ai/A	PRE PRE	A A		40.0 d	100.0a	44.0b	100.0a	0.33 a 1.285 a
3	Dual Magnum.....s-metolachlor Reflex.....fomesafen Nonionic Surfactant	7.62E 2L 100L		1.19 lb ai/A 0.25 lb ai/A 0.25 % v/v	PRE Post Post	A B B		61.7 c	100.0a	69.3 a	70.0b	0.17 a 2.693 a
4	Dual Magnum.....s-metolachlor Sanda.....halosulfuron	7.62E 75DF		1.19 lb ai/A 0.0314 lb ai/A	PRE PRE	A A		63.3 bc	96.7 a	66.7 ab	100.0a	0.82 a 0.960 a
5	Dual Magnum.....s-metolachlor Sanda.....halosulfuron Nonionic Surfactant	7.62E 75DF 100L		1.19 lb ai/A 0.0314 lb ai/A 0.25 % v/v	PRE Post Post	A B B		23.3 e	100.0a	44.0b	0.0c	0.67 a 2.260 a
6	Dual Magnum.....s-metolachlor Reflex.....fomesafen Sanda.....halosulfuron Nonionic Surfactant	7.62E 2L 75DF 100L		1.19 lb ai/A 0.312 lb ai/A 0.0314 lb ai/A 0.25 % v/v	PRE PRE Post Post	A A B B		63.3 bc	100.0a	76.0 a	100.0a	2.17 a 2.167 a
7	Dual Magnum.....s-metolachlor Reflex.....fomesafen Sanda.....halosulfuron LI-700	7.62E 2L 75DF 100L		1.19 lb ai/A 0.312 lb ai/A 0.0314 lb ai/A 0.25 % v/v	PRE PRE Post Post	A A B B		66.7 bc	100.0a	82.7 a	100.0a	4.17 a 1.287 a
8	Dual Magnum.....s-metolachlor Sanda.....halosulfuron Reflex.....fomesafen Nonionic Surfactant	7.62E 75DF 2L 100L		1.19 lb ai/A 0.0314 lb ai/A 0.25 lb ai/A 0.25 % v/v	PRE PRE Post Post	A A B B		88.3 a	100.0a	90.0 a	100.0a	0.83 a 1.240 a
9	Dual Magnum.....s-metolachlor Basagran.....bentazon Raptor.....imazamox Nonionic Surfactant 30% Urea Ammonium Nitrate	7.62E 4L 1 AS 100L 100L		1.19 lb ai/A 0.75 lb ai/A 0.0312 lb ai/A 0.25 % v/v 2.5 % v/v	PRE Post Post Post Post	A B B B B		60.0 c	100.0a	86.0 a	96.7 a	3.00 a 2.287 a
10	Dual Magnum.....s-metolachlor Basagran.....bentazon Raptor.....imazamox Nonionic Surfactant	7.62E 4L 1 AS 100L		1.19 lb ai/A 0.75 lb ai/A 0.0312 lb ai/A 0.25 % v/v	PRE Post Post Post	A B B B		60.0 c	100.0a	70.0 a	100.0a	1.00 a 2.420 a

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							IPOSS	AMASS	IPOSS	CHEAL	PHSVN	PHSVN
Crop Code							Morngrly	Pigweed	Morngrly	Common	Snap	Snap
Weed or Crop Name							Species	Species	Species	Lambqtrs	Bean	Bean
Weed or Crop Name							Control	Control	Control	Control	Gaps	Fresh Wt
Rating Data Type							%	%	%	%	ft/plot	lb/plot
Rating Unit							%	%	%	%	ft/plot	lb/plot
Rating Date							07/22/11	08/01/11	08/01/11	08/01/11	08/03/11	08/03/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code						
11	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE	A	60.0 c	100.0 a	77.7 a	100.0 a	1.50 a	2.453 a
	Basagran.....bentazon	4L		0.75 lb ai/A	Post	B						
	Raptor.....imazamox	1 AS		0.0312 lb ai/A	Post	B						
	LI-700	100L		0.25 % v/v	Post	B						
12	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE	A	77.7 ab	100.0 a	85.0 a	96.7 a	4.50 a	1.873 a
	Basagran.....bentazon	4L		0.75 lb ai/A	Post	B						
	Reflex.....fomesafen	2L		0.187 lb ai/A	Post	B						
	Nonionic Surfactant	100L		0.25 % v/v	Post	B						
	30% Urea Ammonium Nitrate	100L		2.5 % v/v	Post	B						
13	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE	A	71.0 bc	96.7 a	84.3 a	100.0 a	1.17 a	1.733 a
	Basagran.....bentazon	4L		0.75 lb ai/A	Post	B						
	Reflex.....fomesafen	2L		0.187 lb ai/A	Post	B						
	Nonionic Surfactant	100L		0.25 % v/v	Post	B						
14	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE	A	56.7 c	100.0 a	74.3 a	93.3 a	1.83 a	1.900 a
	Basagran.....bentazon	4L		0.75 lb ai/A	Post	B						
	Reflex.....fomesafen	2L		0.187 lb ai/A	Post	B						
	LI-700	100L		0.25 % v/v	Post	B						
LSD (P=.05)							15.41	3.73	23.66	7.51	3.670	1.3372
Standard Deviation							9.18	2.22	14.09	4.47	2.172	0.7916
CV							16.23	2.41	20.77	5.41	127.47	41.9
Replicate F							9.321	0.481	6.987	0.205	2.164	0.963
Replicate Prob(F)							0.0009	0.6233	0.0037	0.8161	0.1377	0.3967
Treatment F							17.784	429.778	8.785	193.194	1.244	1.459
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.3140	0.2105

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

(Bean4-10)

University of Delaware

Evaluating Potential Mesotrione Premix Carryover to Snap Bean
 Actual Carryover
 Trial ID: Bean4-10 Cooperator: PA Vegetable Growers Association
 Location: Field #18 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Field Corn **ZEAMX** **Variety:** T6N52VT3
Planting Date: 04/28/10 **Planting Method:** Row- Unit Planter **Depth:** 2 in
Rate: 28000 Sd/A **Row Spacing:** 30 in **Seed Bed:** Smooth
Soil Temperature: 58 F **Soil Moisture:** Moist **Emergence Date:** 05/05/10

Crop 2: Lima Bean **PHSLU** **Variety:** Cypress
Planting Date: 05/23/11 **Planting Method:** Row- Unit Planter **Depth:** 0.75 in
Rate: 6 Sd/row-ft **Row Spacing:** 30 in **Seed Bed:** Medium
Soil Temperature: 81 F **Soil Moisture:** Moist **Emergence Date:** 05/29/11

Crop 3: Snap Bean **PHSVN** **Variety:** Caprice, Envy, Slenderpack
Planting Date: 05/23/11 **Planting Method:** Row- Unit Planter **Depth:** 0.75 in
Rate: 6 Sd/row-ft **Row Spacing:** 30 in **Seed Bed:** Medium
Soil Temperature: 81 F **Soil Moisture:** Moist **Emergence Date:** 05/29/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 4
Site Type: Field **Study Design:** FACTORIAL
Tillage Type: Chisel Plowed, Disked & Field Cultivated

MAINTENANCE

Field Prep./Maintenance: Force 3G at 5.5 lb/A in furrow and 19-18.5-0 at 18.5 gal/A (39 lb N & 38 lb P) 2 x 2 were applied at corn planting. The study was sidedressed with 60 gal/A 30% UAN solution (195 lb N) at corn layby. Total N applied was 234 lb/A. Roundup WeatherMax was sprayed on the no-till treatments on 5-13-11. The tillage treatments were lightly disked prior to bean planting on 5-16-11. A total PRE application of Ignite 280 was made on 5-24-11. A total POST application of Basagran + Reflex + Select Max was made on 6-9-11.

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	05/27/10	Roundup WeatherMax	4.5	AS	22	fl oz/A
2.	05/13/11	Roundup WeatherMax	4.5	AS	40	fl oz/A
3.	05/24/11	Ignite 280	2.34	SL	36	fl oz/A
4.	06/09/11	Basagran	4	L	1.5	pt/A
5.	06/09/11	Reflex	2	L	1	pt/A
6.	06/09/11	Select Max	1	EC	12	fl oz/A
7.	06/09/11	Nonionic Surfactant			0.25	% v/v

SOIL DESCRIPTION

% Sand: 83 **% OM:** 1.1 **Texture:** loamy sand
% Silt: 10 **pH:** 6.7
% Clay: 7 **CEC:** 2.8 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	04/29/10
Time of Day:	8:45 am
Application Method:	Spray
Application Timing:	PRE
Applic. Placement:	Brdcst
Air Temp., Unit:	54 F
% Relative Humidity:	45
Wind Velocity, Unit:	3 mph
Wind Direction:	West
Dew Presence (Y/N):	N
Soil Temp., Unit:	53 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	N/A
% Cloud Cover:	0

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

06/15/11 - 3rd rating. Cypress Lima Beans sprayed with reflex for palmer pigweed.

102, 104 - few XANST and CYPES emerging

103, 105, 201, 202, 204, 302, 304, 405 - excellent weed control

205, 301, 305, 401 - few IPOSS and CYPES emerging

404, 406 - CYPES emerging

07/19/11 - Periods = Exceptional amount of dirt in these samples:

Evaluating Potential Mesotrione Premix Carryover to Snap Bean							
Actual Carryover							
Trial ID: Bean4b10		Cooperator: PA Vegetable Growers Association					
Location: Field #18		Investigator: Mark VanGessel					
Weed Code	Crop Code	WEED	AMASS	IPOSS	XANST	CYPES	PHSVN
Weed or Crop Name	Weed or Crop Name	Field Corn Injury %	Pigweed Species Control %	Mornglry Species Control %	Common Cocklebr Control %	Yellow Nutsedge Control %	PHSLU Cypress lima Injury %
Rating Data Type	Rating Unit	05/30/10	05/30/10	05/30/10	05/30/10	05/30/10	06/01/11
Rating Date	05/30/10	05/30/10	05/30/10	05/30/10	05/30/10	05/30/10	06/01/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code	
1	Tillage Untreated (No residual)						
2	Tillage Lumax Premix	3.95	SC	2.47 lb ai/A	PRE	A	
3	Tillage Lumax Premix	3.95	SC	4.94 lb ai/A	PRE	A	
4	Tillage Lexar Premix	3.7	FL	2.78 lb ai/A	PRE	A	
5	Tillage Lexar Premix	3.7	FL	5.55 lb ai/A	PRE	A	
6	Tillage Untreated (No residual)						
7	No-Tillage Untreated (No residual)						
8	No-Tillage Lumax Premix	3.95	SC	2.47 lb ai/A	PRE	A	
9	No-Tillage Lumax Premix	3.95	SC	4.94 lb ai/A	PRE	A	
10	No-Tillage Lexar Premix	3.7	FL	2.78 lb ai/A	PRE	A	
11	No-Tillage Lexar Premix	3.7	FL	5.55 lb ai/A	PRE	A	
12	No-Tillage Untreated (No residual)						
	LSD (P=.05)	0.00	0.00	7.85	5.33	7.85	1.04
	Standard Deviation	0.00	0.00	5.44	3.69	5.44	0.72
	CV	0.0	0.0	6.72	4.5	6.94	692.82
	Replicate F	0.000	0.000	1.692	5.500	1.692	1.000
	Replicate Prob(F)	1.0000	1.0000	0.1877	0.0035	0.1877	0.4051
	Treatment F	0.000	0.000	193.974	432.111	184.436	1.000
	Treatment Prob(F)	1.0000	1.0000	0.0001	0.0001	0.0001	0.4671

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

(Bean4b10)

University of Delaware

Weed Code							PHSVN	PHSVN	PHSLU	PHSVN	PHSVN	PHSVN	PHSVN
Crop Code							Envy	Slendrp	Cypress	Caprice	Envy	Slendrp	Caprice
Weed or Crop Name							snap	snap	lima	snap	snap	snap	snap
Weed or Crop Name							Injury	Injury	Injury	Injury	Injury	Injury	Injury
Rating Data Type							%	%	%	%	%	%	%
Rating Unit							06/01/11	06/01/11	06/09/11	06/09/11	06/09/11	06/09/11	06/15/11
Rating Date													
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Unit	Appl Stg	Code						
1	Tillage							0.0 a	0.0 a	0.0 a	0.0 b	0.0 b	0.0 a
	Untreated (No residual)												
2	Tillage							1.8 a	0.0 a	2.5 a	1.3 b	0.0 b	0.0 a
	Lumax Premix	3.95	SC	2.47	lb ai/A	PRE	A						
3	Tillage							1.3 a	3.0 a	1.3 a	1.3 b	0.0 b	0.0 a
	Lumax Premix	3.95	SC	4.94	lb ai/A	PRE	A						
4	Tillage							3.0 a	1.3 a	1.3 a	0.0 b	0.0 b	0.0 a
	Lexar Premix	3.7	FL	2.78	lb ai/A	PRE	A						
5	Tillage							1.3 a	2.5 a	3.0 a	2.5 b	1.3 b	2.5 a
	Lexar Premix	3.7	FL	5.55	lb ai/A	PRE	A						
6	Tillage							0.0 a	0.0 a	0.0 a	0.0 b	0.0 b	0.0 a
	Untreated (No residual)												
7	No-Tillage							0.0 a	0.0 a	0.0 a	0.0 b	0.0 b	0.0 a
	Untreated (No residual)												
8	No-Tillage							1.3 a	1.3 a	2.5 a	1.8 b	0.0 b	0.0 a
	Lumax Premix	3.95	SC	2.47	lb ai/A	PRE	A						
9	No-Tillage							2.5 a	3.8 a	4.3 a	6.8 a	1.8 b	1.3 a
	Lumax Premix	3.95	SC	4.94	lb ai/A	PRE	A						
10	No-Tillage							1.3 a	0.0 a	0.0 a	2.0 b	3.0 ab	3.0 a
	Lexar Premix	3.7	FL	2.78	lb ai/A	PRE	A						
11	No-Tillage							1.3 a	1.8 a	4.3 a	6.8 a	5.5 a	5.0 a
	Lexar Premix	3.7	FL	5.55	lb ai/A	PRE	A						
12	No-Tillage							0.0 a	0.0 a	0.0 a	0.0 b	0.0 b	0.0 a
	Untreated (No residual)												
	LSD (P=.05)							3.42	3.41	3.68	4.22	3.43	3.81
	Standard Deviation							2.37	2.36	2.55	2.93	2.38	2.64
	CV							210.61	209.66	160.77	157.8	248.01	269.83
	Replicate F							0.490	0.624	4.381	1.878	1.775	0.067
	Replicate Prob(F)							0.6917	0.6045	0.0106	0.1525	0.1711	0.9772
	Treatment F							0.709	1.328	1.721	2.816	2.115	1.579
	Treatment Prob(F)							0.7217	0.2534	0.1119	0.0105	0.0477	0.1513

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						PHSVN	PHSVN	PHSVN	PHSVN	PHSVN		
Crop Code						Envy	Slendrp	Caprice	Envy	Slendrp		
Weed or Crop Name						snap	snap	snap	snap	snap		
Weed or Crop Name						Injury	Injury	Yield	Yield	Yield		
Rating Data Type						%	%	lbs/A	lbs/A	lbs/A		
Rating Unit												
Rating Date						06/15/11	06/15/11	07/19/11	07/19/11	07/19/11		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code					
1	Tillage Untreated (No residual)							0.0 a	0.0 b	10473 a	9727 a	9386 bcd
2	Tillage Lumax Premix	3.95	SC	2.47	lb ai/A	PRE	A	0.0 a	0.0 b	10708 a	10398 a	10299 ab
3	Tillage Lumax Premix	3.95	SC	4.94	lb ai/A	PRE	A	0.0 a	0.0 b	9981 a	9102 a	10530 ab
4	Tillage Lexar Premix	3.7	FL	2.78	lb ai/A	PRE	A	0.0 a	0.0 b	10329 a	9227 a	9806 bc
5	Tillage Lexar Premix	3.7	FL	5.55	lb ai/A	PRE	A	0.0 a	0.0 b	10970 a	9288 a	11426 a
6	Tillage Untreated (No residual)							0.0 a	0.0 b	10451 a	11083 a	9807 bc
7	No-Tillage Untreated (No residual)							0.0 a	0.0 b	8670 a	9011 a	7492 e
8	No-Tillage Lumax Premix	3.95	SC	2.47	lb ai/A	PRE	A	0.0 a	0.0 b	10030 a	9035 a	8367 cde
9	No-Tillage Lumax Premix	3.95	SC	4.94	lb ai/A	PRE	A	1.8 a	3.8 b	9867 a	10144 a	8295 cde
10	No-Tillage Lexar Premix	3.7	FL	2.78	lb ai/A	PRE	A	0.0 a	1.3 b	10318 a	10042 a	7587 e
11	No-Tillage Lexar Premix	3.7	FL	5.55	lb ai/A	PRE	A	1.8 a	8.8 a	9564 a	10386 a	8136 de
12	No-Tillage Untreated (No residual)							0.0 a	0.0 b	8856 a	10587 a	8507 cde
LSD (P=.05)						2.09	4.51	1619.5	1705.3	1598.7		
Standard Deviation						1.45	3.12	1121.6	1181.0	1107.2		
CV						497.27	272.34	11.2	12.01	12.12		
Replicate F						0.647	1.194	24.974	13.093	14.703		
Replicate Prob(F)						0.5904	0.3270	0.0001	0.0001	0.0001		
Treatment F						0.882	2.854	1.549	1.412	5.130		
Treatment Prob(F)						0.5658	0.0097	0.1610	0.2166	0.0002		

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Evaluating Potential Mesotrione Premix Carryover to Snap Bean
 Actual Carryover
 Trial ID: Bean4b10 Cooperator: PA Vegetable Growers Association
 Location: Field #18 Investigator: Mark VanGessel

Weed Code	ZEAMX	AMASS	IPOSS	XANST	CYPES	PHSLU	PHSVN	PHSVN		
Crop Code	Field	Pigweed	Morngrly	Common	Yellow	PHSLU	PHSVN	PHSVN		
Weed or Crop Name	Corn	Species	Species	Cocklebr	Nutsedge	Cypress	Caprice	Envy		
Weed or Crop Name	Injury	Control	Control	Control	Control	lima	snap	snap		
Rating Data Type	%	%	%	%	%	Injury	Injury	Injury		
Rating Unit	%	%	%	%	%	%	%	%		
Rating Date	05/30/10	05/30/10	05/30/10	05/30/10	05/30/10	06/01/11	06/01/11	06/01/11		
Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Form Rate Unit					
TABLE OF R MEANS										
Replicate 1	0.0	83.3	83.3	78.3	78.3	0.4	1.0	1.3		
Replicate 2	0.0	83.3	80.8	83.3	80.8	0.0	1.4	1.4		
Replicate 3	0.0	83.3	78.3	83.3	78.3	0.0	0.8	1.4		
Replicate 4	0.0	83.3	80.8	83.3	75.8	0.0	1.5	0.4		
TABLE OF A MEANS										
1 Tillage	0.0	83.3	80.8	82.1	78.3	0.2	1.0	1.2		
2 No-Tillage	0.0	83.3	80.8	82.1	78.3	0.0	1.3	1.0		
TABLE OF B MEANS										
1 No residual	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2 Lumax	3.95 SC	2.47 lb ai/A	0.0	100.0	96.3	96.3	88.8	0.0	2.1	1.5
3 Lumax	3.95 SC	4.94 lb ai/A	0.0	100.0	100.0	100.0	100.0	0.0	1.3	1.9
4 Lexar	3.7 FL	2.78 lb ai/A	0.0	100.0	96.3	96.3	88.8	0.6	1.5	2.1
5 Lexar	3.7 FL	5.55 lb ai/A	0.0	100.0	92.5	100.0	92.5	0.0	2.3	1.3
6 No residual	0.0	100.0	100.0	100.0	100.0	100.0	0.0	0.0	0.0	
TABLE OF AB MEANS										
1 Tillage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
1 No residual	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2 No-Tillage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
1 Tillage	0.0	100.0	96.3	96.3	88.8	0.0	3.0	1.8		
2 Lumax	3.95 SC	2.47 lb ai/A	0.0	100.0	96.3	96.3	88.8	0.0	1.3	1.3
2 No-Tillage	0.0	100.0	96.3	96.3	88.8	0.0	1.3	1.3		
2 Lumax	3.95 SC	2.47 lb ai/A	0.0	100.0	96.3	96.3	88.8	0.0	1.3	
1 Tillage	0.0	100.0	100.0	100.0	100.0	0.0	0.0	1.3		
3 Lumax	3.95 SC	4.94 lb ai/A	0.0	100.0	100.0	100.0	0.0	0.0	1.3	
2 No-Tillage	0.0	100.0	100.0	100.0	100.0	0.0	2.5	2.5		
3 Lumax	3.95 SC	4.94 lb ai/A	0.0	100.0	96.3	96.3	88.8	1.3	0.0	3.0
1 Tillage	0.0	100.0	96.3	96.3	88.8	1.3	0.0	3.0		
4 Lexar	3.7 FL	2.78 lb ai/A	0.0	100.0	96.3	96.3	88.8	0.0	3.0	1.3
2 No-Tillage	0.0	100.0	96.3	96.3	88.8	0.0	3.0	1.3		
4 Lexar	3.7 FL	2.78 lb ai/A	0.0	100.0	92.5	100.0	92.5	0.0	3.3	1.3
1 Tillage	0.0	100.0	92.5	100.0	92.5	0.0	3.3	1.3		
5 Lexar	3.7 FL	5.55 lb ai/A	0.0	100.0	92.5	100.0	92.5	0.0	1.3	1.3
2 No-Tillage	0.0	100.0	92.5	100.0	92.5	0.0	1.3	1.3		
5 Lexar	3.7 FL	5.55 lb ai/A	0.0	100.0	100.0	100.0	0.0	0.0	0.0	
1 Tillage	0.0	100.0	100.0	100.0	100.0	0.0	0.0	0.0		
6 No residual	0.0	100.0	100.0	100.0	100.0	0.0	0.0	0.0		
2 No-Tillage	0.0	100.0	100.0	100.0	100.0	0.0	0.0	0.0		
6 No residual	0.0	100.0	100.0	100.0	100.0	0.0	0.0	0.0		

Weed Code	Crop Code	PHSVN	PHSVN	PHSVN
Weed or Crop Name	Weed or Crop Name	Caprice	Envy	Slendrp
Rating Data Type	Rating Data Type	Yield	Yield	Yield
Rating Unit	Rating Unit	lbs/A	lbs/A	lbs/A
Rating Date	Rating Date	07/19/11	07/19/11	07/19/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit
TABLE OF R MEANS				
Replicate 1		11255	10804	9645
Replicate 2		11348	10268	10369
Replicate 3		9529	10245	9045
Replicate 4		7941	8026	7487
TABLE OF A MEANS				
1 Tillage		10485	9804	10209
2 No-Tillage		9551	9867	8064
TABLE OF B MEANS				
1 No residual		9572	9369	8439
2 Lumax	3.95 SC	2.47 lb ai/A	10369	9716
3 Lumax	3.95 SC	4.94 lb ai/A	9924	9623
4 Lexar	3.7 FL	2.78 lb ai/A	10324	9634
5 Lexar	3.7 FL	5.55 lb ai/A	10267	9837
6 No residual		9653	10835	9157
TABLE OF AB MEANS				
1 Tillage		10473	9727	9386
1 No residual				
2 No-Tillage		8670	9011	7492
1 No residual				
1 Tillage		10708	10398	10299
2 Lumax	3.95 SC	2.47 lb ai/A		
2 No-Tillage		10030	9035	8367
2 Lumax	3.95 SC	2.47 lb ai/A		
1 Tillage		9981	9102	10530
3 Lumax	3.95 SC	4.94 lb ai/A		
2 No-Tillage		9867	10144	8295
3 Lumax	3.95 SC	4.94 lb ai/A		
1 Tillage		10329	9227	9806
4 Lexar	3.7 FL	2.78 lb ai/A		
2 No-Tillage		10318	10042	7587
4 Lexar	3.7 FL	2.78 lb ai/A		
1 Tillage		10970	9288	11426
5 Lexar	3.7 FL	5.55 lb ai/A		
2 No-Tillage		9564	10386	8136
5 Lexar	3.7 FL	5.55 lb ai/A		
1 Tillage		10451	11083	9807
6 No residual				
2 No-Tillage		8856	10587	8507
6 No residual				

Evaluating Potential Mesotrione Premix Carryover to Snap Bean

Actual Carryover

Trial ID: Bean4b10 Cooperator: PA Vegetable Growers Association

Location: Field #18 Investigator: Mark VanGessel

FACTORIAL/POOLED ERROR AOV For ZEAMX Field Corn Injury % 05/30/10

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	0.000000				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	5	0.000000	0.000000	0.000	1.0000	0.0
AB	5	0.000000	0.000000	0.000	0.0000	0.0
ERROR	33	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For AMASS Pigweed Species Control % 05/30/10

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	66666.666667				
R	3	0.000000	0.000000	0.000	1.0000	0.0
A	1	0.000000	0.000000	0.000	1.0000	0.0
B	5	66666.666667	13333.333333	0.000	1.0000	0.0
AB	5	0.000000	0.000000	0.000	0.0000	0.0
ERROR	33	0.000000	0.000000			

FACTORIAL/POOLED ERROR AOV For IPOSS Mornnglry Species Control % 05/30/10

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	64166.666667				
R	3	150.000000	50.000000	1.692	0.1877	4.5
A	1	0.000000	0.000000	0.000	1.0000	3.2
B	5	63041.666667	12608.333333	426.744	0.0001	5.5
AB	5	0.000000	0.000000	0.000	1.0000	7.8
ERROR	33	975.000000	29.545455			

FACTORIAL/POOLED ERROR AOV For XANST Common Cocklebr Control % 05/30/10

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	65491.666667				
R	3	225.000000	75.000000	5.500	0.0035	3.1
A	1	0.000000	0.000000	0.000	1.0000	2.2
B	5	64816.666667	12963.333333	950.645	0.0001	3.8
AB	5	0.000000	0.000000	0.000	1.0000	5.3
ERROR	33	450.000000	13.636364			

FACTORIAL/POOLED ERROR AOV For CYPES Yellow Nutsedge Control % 05/30/10

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	61066.666667				
R	3	150.000000	50.000000	1.692	0.1877	4.5
A	1	0.000000	0.000000	0.000	1.0000	3.2
B	5	59941.666667	11988.333333	405.759	0.0001	5.5
AB	5	0.000000	0.000000	0.000	1.0000	7.8
ERROR	33	975.000000	29.545455			

FACTORIAL/POOLED ERROR AOV For PHSLU Cypress lima Injury % 06/01/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	24.479167				
R	3	1.562500	0.520833	1.000	0.4051	0.6
A	1	0.520833	0.520833	1.000	0.3246	0.4
B	5	2.604167	0.520833	1.000	0.4331	0.7
AB	5	2.604167	0.520833	1.000	0.4331	1.0
ERROR	33	17.187500	0.520833			

FACTORIAL/POOLED ERROR AOV For PHSVN Caprice snap Injury % 06/01/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	269.312500				
R	3	3.729167	1.243056	0.226	0.8776	2.0
A	1	1.020833	1.020833	0.186	0.6694	1.4
B	5	39.437500	7.887500	1.434	0.2381	2.4
AB	5	43.604167	8.720833	1.585	0.1915	3.4
ERROR	33	181.520833	5.500631			

FACTORIAL/POOLED ERROR AOV For PHSVN Envy snap Injury % 06/01/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	237.250000				
R	3	8.250000	2.750000	0.490	0.6917	2.0
A	1	0.333333	0.333333	0.059	0.8090	1.4
B	5	34.000000	6.800000	1.211	0.3256	2.4
AB	5	9.416667	1.883333	0.335	0.8878	3.4
ERROR	33	185.250000	5.613636			

FACTORIAL/POOLED ERROR AOV For PHSVN SlendrpK snap Injury % 06/01/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	275.250000				
R	3	10.416667	3.472222	0.624	0.6045	2.0
A	1	0.000000	0.000000	0.000	1.0000	1.4
B	5	72.750000	14.550000	2.615	0.0424	2.4
AB	5	8.500000	1.700000	0.306	0.9060	3.4
ERROR	33	183.583333	5.563131			

FACTORIAL/POOLED ERROR AOV For PHSLU Cypress lima Injury % 06/09/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	421.666667				
R	3	85.166667	28.388889	4.381	0.0106	2.1
A	1	3.000000	3.000000	0.463	0.5010	1.5
B	5	98.416667	19.683333	3.038	0.0231	2.6
AB	5	21.250000	4.250000	0.656	0.6592	3.7
ERROR	33	213.833333	6.479798			

FACTORIAL/POOLED ERROR AOV For PHSVN Caprice snap Injury % 06/09/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	595.979167				
R	3	48.229167	16.076389	1.878	0.1525	2.4
A	1	50.020833	50.020833	5.843	0.0213	1.7
B	5	160.104167	32.020833	3.740	0.0086	3.0
AB	5	55.104167	11.020833	1.287	0.2929	4.2
ERROR	33	282.520833	8.561237			

FACTORIAL/POOLED ERROR AOV For PHSVN Envy snap Injury % 06/09/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	347.916667				
R	3	30.083333	10.027778	1.775	0.1711	2.0
A	1	27.000000	27.000000	4.780	0.0360	1.4
B	5	71.166667	14.233333	2.520	0.0488	2.4
AB	5	33.250000	6.650000	1.177	0.3413	3.4
ERROR	33	186.416667	5.648990			

FACTORIAL/POOLED ERROR AOV For PHSVN SlendrpK snap Injury % 06/09/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	352.979167				
R	3	1.395833	0.465278	0.067	0.9772	2.2
A	1	15.187500	15.187500	2.176	0.1497	1.6
B	5	87.604167	17.520833	2.510	0.0495	2.7
AB	5	18.437500	3.687500	0.528	0.7532	3.8
ERROR	33	230.354167	6.980429			

FACTORIAL/POOLED ERROR AOV For PHSVN Caprice snap Injury % 06/15/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	237.479167				
R	3	11.395833	3.798611	0.906	0.4487	1.7
A	1	25.520833	25.520833	6.087	0.0190	1.2
B	5	31.104167	6.220833	1.484	0.2217	2.1
AB	5	31.104167	6.220833	1.484	0.2217	3.0
ERROR	33	138.354167	4.192551			

FACTORIAL/POOLED ERROR AOV For PHSVN Envy snap Injury % 06/15/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	93.916667				
R	3	4.083333	1.361111	0.647	0.5904	1.2
A	1	4.083333	4.083333	1.941	0.1729	0.9
B	5	8.166667	1.633333	0.776	0.5737	1.5
AB	5	8.166667	1.633333	0.776	0.5737	2.1
ERROR	33	69.416667	2.103535			

FACTORIAL/POOLED ERROR AOV For PHSVN SlendrpK snap Injury % 06/15/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	661.979167				
R	3	34.895833	11.631944	1.194	0.3270	2.6
A	1	63.020833	63.020833	6.472	0.0158	1.8
B	5	121.354167	24.270833	2.492	0.0508	3.2
AB	5	121.354167	24.270833	2.492	0.0508	4.5
ERROR	33	321.354167	9.738005			

FACTORIAL/POOLED ERROR AOV For PHSVN Caprice snap Yield lbs/A 07/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	157212713.796891				
R	3	94256383.683782	31418794.561261	24.974	0.0001	935
A	1	10475672.338670	10475672.338670	8.327	0.0068	661
B	5	4957144.538818	991428.907764	0.788	0.5658	1145
AB	5	6007115.248236	1201423.049647	0.955	0.4592	1620
ERROR	33	41516397.987385	1258072.666284			

FACTORIAL/POOLED ERROR AOV For PHSVN Envy snap Yield lbs/A 07/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	119702378.197024				
R	3	54790409.865429	18263469.955143	13.939	0.0001	954
A	1	48064.581861	48064.581861	0.037	0.8493	675
B	5	10531496.626979	2106299.325396	1.608	0.1855	1169
AB	5	11093014.213885	2218602.842777	1.693	0.1638	1653
ERROR	33	43239392.908870	1310284.633602			

FACTORIAL/POOLED ERROR AOV For PHSVN Slendrp snap Yield lbs/A 07/19/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	161246925.090019				
R	3	54070975.569807	18023658.523269	15.652	0.0001	895
A	1	55194387.351535	55194387.351535	47.931	0.0001	633
B	5	9686033.971214	1937206.794243	1.682	0.1664	1096
AB	5	4294799.258626	858959.851725	0.746	0.5949	1549
ERROR	33	38000728.938838	1151537.240571			

(Bean5-11)

University of Delaware

Lima and Snap Bean Tolerance to Experimental Herbicides

Trial ID: Bean5-11 Cooperator:
Location: Field #18 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Snap Bean PHSVN **Variety:** Dart
Planting Date: 06/15/11 **Planting Method:** Row- Unit Planter **Depth:** 0.75 in
Rate: 4 Sd/row-ft **Row Spacing:** 30 in **Seed Bed:** Smooth
Soil Temperature: 79 F **Soil Moisture:** Moist **Emergence Date:** 06/20/11

Crop 2: Lima Bean PHSLU **Variety:** Cypress
Planting Date: 06/15/11 **Planting Method:** Row- Unit Planter **Depth:** 0.75 in
Rate: 4 Sd/row-ft **Row Spacing:** 30 in **Seed Bed:** Smooth
Soil Temperature: 79 F **Soil Moisture:** Moist **Emergence Date:** 06/20/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

SOIL DESCRIPTION

% Sand: 81 **% OM:** 1.3 **Texture:** loamy sand
% Silt: 12 **pH:** 5.7
% Clay: 7 **CEC:** 4.6 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.4 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	06/15/11
Time of Day:	3:30 pm
Application Method:	Spray
Application Timing:	PRE
Applic. Placement:	Brdcst
Air Temp., Unit:	79 F
% Relative Humidity:	35
Wind Velocity, Unit:	5 mph
Wind Direction:	Northwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	78 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	N/A
% Cloud Cover:	10

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	18 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

7/22/11 - Grass control was excellent in all treatments

Lima and Snap Bean Tolerance to Experimental Herbicides													
Trial ID: Bean5-11		Cooperator:											
Location: Field #18		Investigator: Mark VanGessel											
Weed Code	Crop Code	PHSLU	PHSVN	PHSLU	PHSVN	AMAPA	AMBEL						
Weed or Crop Name	Weed or Crop Name	Lima Bean	Snap Bean	Lima Bean	Snap Bean	Palmer Amaranth	Common Ragweed						
Rating Data Type	Rating Unit	Injury %	Injury %	Stunting %	Stunting %	Control %	Control %						
Rating Date	Rating Date	06/27/11	06/27/11	07/08/11	07/08/11	07/08/11	07/08/11						
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Stg Stg							
1	Untreated Check							0.0c	0.0e	0.0d	0.0f	0.0b	3.0de
2	Dual Magnum.....s-metolachlor	7.62E		0.95 lb ai/A	PRE			0.0c	0.0e	0.0d	0.0f	100.0a	0.0e
3	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE			0.0c	0.0e	2.3cd	5.7ef	100.0a	2.9de
4	Dual Magnum.....s-metolachlor	7.62E		1.43 lb ai/A	PRE			2.3bc	10.7cd	0.0d	5.7ef	100.0a	2.9de
5	Zidua.....pyoxasulfone	85WG		0.04 lb ai/A	PRE			0.0c	7.3d	9.0ab	14.0cd	100.0a	33.0cde
6	Zidua.....pyoxasulfone	85WG		0.053 lb ai/A	PRE			0.0c	14.0bc	5.7bc	9.0de	100.0a	79.3ab
7	Zidua.....pyoxasulfone	85WG		0.08 lb ai/A	PRE			8.0a	15.3ab	9.0ab	18.3abc	100.0a	84.4ab
8	Zidua.....pyoxasulfone	85WG		0.106 lb ai/A	PRE			7.0ab	18.0ab	10.7a	25.0a	100.0a	93.6a
9	Zidua.....pyoxasulfone	85WG		0.053 lb ai/A	PRE			5.7ab	19.0a	12.3a	23.3ab	100.0a	68.3abc
	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE								
10	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE			3.3abc	18.3a	12.3a	16.3bcd	100.0a	47.4bcd
	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE								
LSD (P=.05)				4.69	4.32	4.94	7.96	0.00	45.46				
Standard Deviation				2.74	2.52	2.88	4.64	0.00	24.14				
CV				103.9	24.53	46.95	39.53	0.0	58.2				
Replicate F				1.554	3.347	0.366	0.373	0.000	0.330				
Replicate Prob(F)				0.2384	0.0581	0.6987	0.6936	1.0000	0.7284				
Treatment F				4.111	29.723	9.703	11.416	0.000	7.435				
Treatment Prob(F)				0.0052	0.0001	0.0001	0.0001	1.0000	0.0048				

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						CHEAL	IPOSS	PHSLU	PHSVN	AMAPA	AMBEL
Crop Code						Common	Morninglry	Lima	Snap	Palmer	Common
Weed or Crop Name						Lambqtrs	Species	Bean	Bean	Amaranth	Ragweed
Weed or Crop Name						Control	Control	Injury	Injury	Control	Control
Rating Data Type						%	%	%	%	%	%
Rating Unit						07/08/11	07/08/11	07/22/11	07/22/11	07/22/11	07/22/11
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg						
1	Untreated Check					0.0e	0.0e	0.0a	0.0e	0.0d	0.0e
2	Dual Magnum.....s-metolachlor	7.62E		0.95 lb ai/A	PRE	10.0de	0.0e	0.0a	0.0e	97.0b	0.0e
3	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE	26.7cd	20.0d	0.0a	0.0e	97.0b	3.9e
4	Dual Magnum.....s-metolachlor	7.62E		1.43 lb ai/A	PRE	46.7bc	30.0cd	5.7a	6.7de	99.0ab	36.7d
5	Zidua.....pyoxasulfone	85WG		0.04 lb ai/A	PRE	56.7b	36.7cd	2.3a	10.7cd	93.0c	33.3d
6	Zidua.....pyoxasulfone	85WG		0.053 lb ai/A	PRE	82.7a	40.0bc	0.0a	15.0bc	98.3ab	46.7cd
7	Zidua.....pyoxasulfone	85WG		0.08 lb ai/A	PRE	100.0a	36.7cd	4.7a	16.3bc	100.0a	86.7ab
8	Zidua.....pyoxasulfone	85WG		0.106 lb ai/A	PRE	100.0a	56.7ab	8.0a	24.0a	100.0a	100.0a
9	Zidua.....pyoxasulfone	85WG		0.053 lb ai/A	PRE	100.0a	75.0a	4.7a	21.3ab	100.0a	66.7bc
	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE						
10	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE	100.0a	66.7a	3.3a	17.3abc	100.0a	40.0d
	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE						
LSD (P=.05)						20.63	18.90	5.92	7.54	2.81	21.27
Standard Deviation						12.02	11.02	3.45	4.40	1.64	12.35
CV						19.31	30.46	120.3	39.5	1.85	29.83
Replicate F						1.523	0.130	0.390	0.653	0.087	3.386
Replicate Prob(F)						0.2449	0.8785	0.6829	0.5322	0.9169	0.0578
Treatment F						32.883	15.897	2.075	12.791	1087.083	24.212
Treatment Prob(F)						0.0001	0.0001	0.0896	0.0001	0.0001	0.0001

Weed Code						CHEAL	IPOSS
Crop Code						Common	Morninglry
Weed or Crop Name						Lambqtrs	Species
Weed or Crop Name						Control	Control
Rating Data Type						%	%
Rating Unit						07/22/11	07/22/11
Rating Date							
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg		
1	Untreated Check					0.0e	0.0d
2	Dual Magnum.....s-metolachlor	7.62E		0.95 lb ai/A	PRE	10.0de	0.0d
3	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE	10.0de	0.0d
4	Dual Magnum.....s-metolachlor	7.62E		1.43 lb ai/A	PRE	26.7de	0.0d
5	Zidua.....pyoxasulfone	85WG		0.04 lb ai/A	PRE	33.3cd	0.0d
6	Zidua.....pyoxasulfone	85WG		0.053 lb ai/A	PRE	63.3bc	0.0d
7	Zidua.....pyoxasulfone	85WG		0.08 lb ai/A	PRE	83.3ab	13.3cd
8	Zidua.....pyoxasulfone	85WG		0.106 lb ai/A	PRE	100.0a	33.3bc
9	Zidua.....pyoxasulfone	85WG		0.053 lb ai/A	PRE	100.0a	68.3a
	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE		
10	Dual Magnum.....s-metolachlor	7.62E		1.19 lb ai/A	PRE	100.0a	50.0ab
	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE		
LSD (P=.05)						30.95	21.91
Standard Deviation						18.04	12.77
CV						34.26	77.39
Replicate F						0.932	2.806
Replicate Prob(F)						0.4121	0.0870
Treatment F						15.604	11.726
Treatment Prob(F)						0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Sulfentrazone Use in Lima Bean

Trial ID: Bean6-11 Cooperator:
 Location: Field #18 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Lima Bean **PHSLU** **Variety:** Cypress
Planting Date: 05/23/11 **Planting Method:** Row- Unit Planter **Depth:** 0.75 in
Rate: 3 Sd/row-ft **Row Spacing:** 30 in **Seed Bed:** Medium
Soil Temperature: 81 F **Soil Moisture:** Moist **Emergence Date:** 05/29/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

SOIL DESCRIPTION

% Sand: 81 **% OM:** 1.3 **Texture:** loamy sand
% Silt: 12 **pH:** 5.7
% Clay: 7 **CEC:** 4.6 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.4 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	05/25/11
Time of Day:	10:30 am
Application Method:	Spray
Application Timing:	PRE
Applic. Placement:	Brdcst
Air Temp., Unit:	79 F
% Relative Humidity:	62
Wind Velocity, Unit:	1 mph
Wind Direction:	East
Dew Presence (Y/N):	N
Soil Temp., Unit:	79 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	10

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

8/3/11 - Plot 309, Row 2 - Beans might have blown out.
Plot 310, Row 1 - had 2/3 dirt
Weights in lbs - beans in the pods

Sulfentrazone Use in Lima Bean												
Trial ID: Bean6-11		Cooperator:										
Location: Field #18		Investigator: Mark VanGessel										
Weed Code	Crop Code	PHSLU Lima Total	PHSLU Lima Total	PHSLU Lima Bean Stunting %	AMAPA Palmer Amaranth Control %	IPOSS Morngrly Species Control %	PHSLU Lima Bean Stunting %					
Weed or Crop Name	Weed or Crop Name	Std ct	#Normal	%	Control %	Control %	Stunting %					
Rating Data Type	Rating Unit	#/20'row	#/20'row	%	%	%	%					
Rating Date	Rating Date	06/09/11	06/09/11	06/14/11	06/14/11	06/14/11	06/24/11					
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Unit	Stg						
1	Untreated Check						51 a	38 a	0.0 c	0.0 d	0.0 f	0.0 b
2	Spartan Charge Premix	3.5F		0.0342 lb ai/A	PRE		57 a	40 a	0.0 c	75.0 c	36.7 e	0.0 b
3	Spartan Charge Premix	3.5F		0.077 lb ai/A	PRE		59 a	43 a	8.0 ab	84.3 bc	43.3 de	0.0 b
4	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE		58 a	39 a	3.3 bc	93.3 ab	56.7 cd	8.0 a
5	Spartan Charge Premix	3.5F		0.154 lb ai/A	PRE		56 a	39 a	2.3 bc	94.3 ab	60.0 bc	9.0 a
6	Spartan Charge Premix	3.5F		0.205 lb ai/A	PRE		54 a	36 a	6.7 ab	100.0 a	78.3 a	9.7 a
7	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE		59 a	39 a	10.0 a	100.0 a	81.7 a	10.0 a
	Dual Magnum.....s-metolachlor	7.62E		1.43 lb ai/A	PRE							
8	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE		60 a	38 a	0.0 c	96.7 a	78.3 a	8.4 a
	Dual Magnum.....s-metolachlor	7.62E		0.95 lb ai/A	PRE							
9	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE		57 a	37 a	3.3 bc	100.0 a	66.7 abc	9.7 a
	Dual Magnum.....s-metolachlor	7.62E		0.95 lb ai/A	PRE							
	Pursuit.....imazethapyr	2AS		0.0234 lb ai/A	PRE							
10	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE		57 a	39 a	0.0 c	96.7 a	73.3 ab	2.3 b
	Dual Magnum.....s-metolachlor	7.62E		0.95 lb ai/A	PRE							
	Pursuit.....imazethapyr	2AS		0.0312 lb ai/A	PRE							
LSD (P=.05)							5.2	9.5	5.89	10.42	15.23	4.16
Standard Deviation							3.0	5.5	3.43	6.07	8.88	2.42
CV							5.33	14.26	101.94	7.23	15.44	42.38
Replicate F							0.806	1.602	1.132	1.508	2.316	0.460
Replicate Prob(F)							0.4629	0.2304	0.3443	0.2480	0.1273	0.6392
Treatment F							2.094	0.342	3.475	76.076	24.260	10.388
Treatment Prob(F)							0.0905	0.9474	0.0118	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code					AMAPA	IPOSS	PHSLU	PHSLU	PHSLU	PHSLU	
Crop Code					Palmer	Morngly	Lima	Lima	Lima	Lima	
Weed or Crop Name					Amaranth	Species	Total	Total	Bean	Bean	
Weed or Crop Name					Control	Control	Gaps	Fresh Wt	Pod-plmp	Pod-flat	
Rating Data Type					%	%	ft/row	lb/plot	#/4plant	#/4plant	
Rating Unit					%	%	ft/row	lb/plot	#/4plant	#/4plant	
Rating Date					06/24/11	06/24/11	08/03/11	08/03/11	08/03/11	08/03/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg						
1	Untreated Check					0.0c	0.0b	0.7a	2.993a	105.7a	3.7a
2	Spartan Charge Premix	3.5F		0.0342 lb ai/A	PRE	55.0b	74.5a	0.0a	4.313a	87.0a	2.7a
3	Spartan Charge Premix	3.5F		0.077 lb ai/A	PRE	86.0a	80.0a	0.0a	2.793a	101.7a	4.0a
4	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE	91.7a	78.3a	0.0a	3.687a	85.3a	6.7a
5	Spartan Charge Premix	3.5F		0.154 lb ai/A	PRE	95.0a	83.3a	5.0a	3.960a	99.3a	9.3a
6	Spartan Charge Premix	3.5F		0.205 lb ai/A	PRE	96.0a	89.3a	0.0a	3.413a	111.7a	5.3a
7	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE	100.0a	85.8a	0.0a	4.847a	110.0a	5.0a
	Dual Magnum.....s-metolachlor	7.62E		1.43 lb ai/A	PRE						
8	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE	100.0a	79.5a	0.0a	3.995a	101.3a	6.7a
	Dual Magnum.....s-metolachlor	7.62E		0.95 lb ai/A	PRE						
9	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE	100.0a	76.7a	0.0a	4.540a	117.7a	3.3a
	Dual Magnum.....s-metolachlor	7.62E		0.95 lb ai/A	PRE						
	Pursuit.....imazethapyr	2AS		0.0234 lb ai/A	PRE						
10	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE	100.0a	78.3a	0.0a	4.440a	86.3a	2.0a
	Dual Magnum.....s-metolachlor	7.62E		0.95 lb ai/A	PRE						
	Pursuit.....imazethapyr	2AS		0.0312 lb ai/A	PRE						
LSD (P=.05)						15.78	18.76	4.77	1.5014	34.57	5.84
Standard Deviation						9.20	10.71	2.78	0.8715	20.15	3.41
CV						11.17	14.75	491.1	22.36	20.03	69.98
Replicate F						0.504	0.993	0.857	2.424	2.099	0.080
Replicate Prob(F)						0.6125	0.3951	0.4412	0.1185	0.1516	0.9230
Treatment F						36.322	17.524	0.957	1.804	0.946	1.272
Treatment Prob(F)						0.0001	0.0001	0.5039	0.1410	0.5118	0.3161

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

(Bean6-11)

University of Delaware

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg	PHSLU Lima Bean Pod-dry #/4plant 08/03/11	PHSLU Lima Bean Pod-totl #/4plant 08/03/11
1	Untreated Check						29.3 a	138.7 a
2	Spartan Charge Premix	3.5F		0.0342 lb ai/A	PRE		24.3 a	114.0 a
3	Spartan Charge Premix	3.5F		0.077 lb ai/A	PRE		31.7 a	137.3 a
4	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE		24.7 a	116.7 a
5	Spartan Charge Premix	3.5F		0.154 lb ai/A	PRE		31.7 a	140.3 a
6	Spartan Charge Premix	3.5F		0.205 lb ai/A	PRE		25.3 a	142.3 a
7	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE		30.0 a	145.0 a
	Dual Magnum.....s-metolachlor	7.62E		1.43 lb ai/A	PRE			
8	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE		17.3 a	125.3 a
	Dual Magnum.....s-metolachlor	7.62E		0.95 lb ai/A	PRE			
9	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE		31.0 a	152.0 a
	Dual Magnum.....s-metolachlor	7.62E		0.95 lb ai/A	PRE			
	Pursuit.....imazethapyr	2AS		0.0234 lb ai/A	PRE			
10	Spartan Charge Premix	3.5F		0.103 lb ai/A	PRE		25.3 a	113.7 a
	Dual Magnum.....s-metolachlor	7.62E		0.95 lb ai/A	PRE			
	Pursuit.....imazethapyr	2AS		0.0312 lb ai/A	PRE			
LSD (P=.05)							20.68	46.28
Standard Deviation							12.05	26.98
CV							44.53	20.36
Replicate F							0.826	0.727
Replicate Prob(F)							0.4537	0.4969
Treatment F							0.426	0.804
Treatment Prob(F)							0.9041	0.6186

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

(Bean7-11)

University of Delaware

Effectiveness of Cultivation for Weed Control in Lima Beans

Trial ID: Bean7-11 Cooperator:
Location: Field #32 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel Title: Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy City: Georgetown State: DE Zip Code: 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Pigweed Species	AMASS	Amaranthus sp.
2.	Morningglory Species	IPOSS	Ipomoea sp.

Crop 1: Lima Bean PHSLU Variety: Cypress
Planting Date: 06/30/11 Planting Method: Row- Unit Planter Depth: 0.75 in
Rate: 3 Sd/row-ft Row Spacing: 30 in Seed Bed: Medium
Soil Temperature: 82 F Soil Moisture: Fair Emergence Date: 07/05/11

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 50 FT Reps: 4
Site Type: Field Study Design: RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

SOIL DESCRIPTION

% Sand: 77 % OM: 1.3 Texture: sandy loam
% Silt: 12 pH: 5.9
% Clay: 11 CEC: 6.4 Fert. Level: Optimum

Irrigation/Type: Sprinkler - Traveling Gun Frequency: as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 Unit: mi

APPLICATION DESCRIPTION

	A	B	C	D	E	F	G
Application Date:	06/05/11	07/11/11	07/18/11	07/14/11	07/21/11	07/18/11	07/27/11
Time of Day:			11:30 am	3:15 pm			
Application Method:	Cultivatn	Cultivatn	Spray	Spray	Cultivatn	Cultivatn	Cultivatn
Application Timing:	5DAP	Unifol	Un+7days	1st Trif	1st+7days	2nd Trif	2nd+7days
Applic. Placement:			Brdcst	Brdcst			
Air Temp., Unit:			87 F	82 F			
% Relative Humidity:			48	38			
Wind Velocity, Unit:			3 mph	2 mph			
Wind Direction:			West	East			
Dew Presence (Y/N):			N	N			
Soil Temp., Unit:			85 F	80 F			
Soil Surf. Moisture:			Dry	Dry			
Root Zone Moisture:			Dry	Moist			
Leaf Surf. Moisture:			Dry	Dry			
% Cloud Cover:			5	10			

CROP STAGE AT EACH APPLICATION							
	A	B	C	D	E	F	G
Crop 1 Code:	PHSLU	PHSLU	PHSLU	PHSLU	PHSLU	PHSLU	PHSLU
Growth Stage:	cracking	unifoliate	2-trifol	1-trifol	4-5 trifol	2-trifol	vegetative
Height, Unit:		2.5 in	6.5 in	5 in	7 in	6.5 in	11 in
Crop Health:		Good	Good	Good	Good	Good	Good

WEED STAGE AT EACH APPLICATION							
	A	B	C	D	E	F	G
Weed 1 Code:	AMASS	AMASS	AMASS	AMASS	AMASS	AMASS	AMASS
Growth Stage:		cot-3 leaf		vegetative		vegetative	
Height, Unit:		0.5 in		2.5 in		3 in	
Density,Unit:		0-10 m2		0-10 m2		0-10 m2	
Weed 2 Code:	IPOSS	IPOSS	IPOSS	IPOSS	IPOSS	IPOSS	IPOSS
Growth Stage:		cot-2 leaf		cot-5 leaf		vegetative	
Height, Unit:		1.3 in		2.5 in		3 in	
Density,Unit:		0-4 m2		0-4 m2		0-4 m2	

APPLICATION EQUIPMENT							
		B	C	D	E	F	G
Appl. Equipment:			Tractor	Tractor			
Operating Pressure:			40 psi	40 psi			
Nozzle Type:			AIRMIX	AIRMIX			
Nozzle Size:			11002	11002			
Nozzle Spacing, Unit:			20 in	20 in			
Boom Length, Unit:			6 nozl	6 nozl			
Boom Height, Unit:			24 in	22 in			
Ground Speed, Unit:			3 mph	3 mph			
Carrier:			water	water			
Spray Volume, Unit:			20 gpa	20 gpa			
Propellant:			Comp. Air	Comp. Air			

Trial Comments

Pigweed species present in this trial is predominately Palmer amaranth.

The rotary hoe was run 2-3 inches deep at 10 mph. The standard cultivator was run 1.5-2 inches deep at 2-3 mph. The In-row cultivator was run 1.5 inches deep at 1-2 mph. The No-Till cultivator was run 2" deep at 2.5 to 3 mph.

9-13-11: Number of weeds documented reflects those seen at or above bean canopy. Based on visual observation in-row cultivator at 2nd trifoliate fb 7 days was outstanding and the most consistent control. The standard cultivator at the same timings was very good for 2 of the four reps, and only fair in the other two reps. The wide/NT cultivator was very good in one rep and fair in one rep. Rotary hoe did not improve overall weed control.

Effectiveness of Cultivation for Weed Control in Lima Beans													
Trial ID: Bean7-11		Cooperator:											
Location: Field #32		Investigator: Mark VanGessel											
Weed Code	AMASS	IPOSS	AMASS	IPOSS	PHSLU	PHSLU	PHSLU	PHSLU	PHSLU	PHSLU	PHSLU		
Crop Code	Pigweed	Morngrly	Pigweed	Morngrly	Lima	Lima	Lima	Lima	Lima	Lima	Lima		
Weed or Crop Name	Species	Species	Species	Species	Bean	Bean	Bean	Bean	Bean	Bean	Bean		
Weed or Crop Name	Count	Count	Count	Count	Yield	plump	flat	flat	flat	flat	dry		
Rating Data Type	#/25ft2	#/25ft2	#/25ft2	#/25ft2	lb/A	%	%	%	%	%	%		
Rating Unit	08/11/11	08/11/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11		
Rating Date	08/11/11	08/11/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11		
Trt	Treatment	Rate	Grow	Appl									
No.	Name	Rate	Unit	Stg	Code								
1	Stnd Cultivator		Unifol	B		8.5 b-e	6.3 a	5.0 ab	1.0 a	429.7 a	39 a	55 a	5 a
	Stnd Cultivator		+7 days	C									
2	Stnd Cultivator		1st Trif	D		13.0 a-d	1.3 d	4.3 abc	1.5 a	391.6 a	31 a	67 a	2 a
	Stnd Cultivator		+7 days	E									
3	Stnd Cultivator		2nd Trif	F		1.8 de	1.8 cd	0.8 de	2.3 a	348.2 a	24 a	74 a	2 a
	Stnd Cultivator		+7 days	G									
4	Inrow Cultivatr		Unifol	B		14.5 abc	3.0 bcd	4.5 abc	1.5 a	551.4 a	37 a	60 a	3 a
	Inrow Cultivatr		+7 days	C									
5	Inrow Cultivatr		1st Trif	D		18.8 ab	1.5 cd	4.8 ab	1.0 a	380.9 a	27 a	67 a	5 a
	Inrow Cultivatr		+7 days	E									
6	Inrow Cultivatr		2nd Trif	F		0.5 e	1.0 d	0.3 e	1.3 a	482.9 a	25 a	72 a	2 a
	Inrow Cultivatr		+7 days	G									
7	Rotary hoe		5 DAP	A		14.3 abc	4.0 abc	2.8 b-e	2.5 a	271.0 a	30 a	66 a	4 a
	Stnd Cultivator		Unifol	B									
	Stnd Cultivator		+7 days	C									
8	Rotary hoe		5 DAP	A		22.8 a	2.0 bcd	6.0 a	1.3 a	492.5 a	41 a	54 a	5 a
	Inrow Cultivatr		Unifol	B									
	Inrow Cultivatr		+7 days	C									
9	Stnd Cultivator		Unifol	B		3.3 cde	4.5 ab	2.0 cde	2.3 a	617.3 a	29 a	64 a	7 a
	Basagran	0.75 lb ai/A	+7 days	C									
	Nonionic Surf.	0.25 % v/v	+7 days	C									
10	Basagran	0.75 lb ai/A	1st Trif	D		6.3 cde	1.8 cd	3.3 bcd	0.8 a	718.3 a	28 a	70 a	2 a
	Nonionic Surf.	0.25 % v/v	1st Trif	D									
	Stnd Cultivator		+7 DAT	E									
11	Wide/NT Cultvtr		1st Trif	D		10.3 b-e	2.3 bcd	3.0 bcd	1.8 a	464.4 a	30 a	66 a	4 a
	Wide/NT Cultvtr		+7 days	E									
12	Wide/NT Cultvtr		2nd Trif	F		2.5 de	3.3 bcd	2.0 cde	1.8 a	366.1 a	25 a	72 a	3 a
	Wide/NT Cultvtr		+7 days	G									
LSD (P=.05)						11.59	2.73	2.66	1.51	253.14	20.0	21.5	4.1
Standard Deviation						8.03	1.89	1.84	1.04	175.31	13.8	14.9	2.8
CV						82.85	69.84	57.36	66.87	38.15	45.28	22.72	74.81
Replicate F						10.199	5.814	10.409	4.956	4.910	1.278	1.191	0.975
Replicate Prob(F)						0.0001	0.0026	0.0001	0.0060	0.0063	0.2979	0.3284	0.4165
Treatment F						3.171	2.729	3.662	1.130	2.015	0.682	0.726	1.233
Treatment Prob(F)						0.0050	0.0127	0.0018	0.3709	0.0593	0.7455	0.7056	0.3048

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Effectiveness of Cultivation for Weed Control in Lima Beans								
Trial ID: Bean7-11 Cooperator:								
Location: Field #32 Investigator: Mark VanGessel								
Weed Code	AMASS	IPOSS	AMASS	IPOSS	PHSLU	PHSLU	PHSLU	PHSLU
Crop Code								
Weed or Crop Name	Pigweed	Mornglry	Pigweed	Mornglry	Lima	Lima	Lima	Lima
Weed or Crop Name	Species	Species	Species	Species	Bean	Bean	Bean	Bean
Rating Data Type	UntrCnt	UntrCnt	UntrCnt	UntrCnt	Yield	plump	flat	dry
Rating Unit	#/25ft2	#/25ft2	#/25ft2	#/25ft2	lb/A	%	%	%
Rating Date	08/11/11	08/11/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11
Trt Treatment								
No. Name								
9 Untreated Portion	17.6 a	4.3 a	3.8 a	3.8 a	221.8 a	32 a	63 a	5 a
10 Untreated Portion	15.3 a	5.0 a	5.3 a	4.8 a	304.6 a	45 a	53 a	2 b
LSD (P=.05)	33.49	8.70	4.95	2.25	201.69	62.3	61.9	0.5
Standard Deviation	11.01	2.86	2.20	1.00	89.64	27.7	27.5	0.2
CV	67.05	61.24	48.86	23.53	34.05	71.62	47.52	6.01
Replicate F	1.867	2.599	0.483	3.500	3.230	0.378	0.509	257.138
Replicate Prob(F)	0.3675	0.2900	0.7175	0.1655	0.1807	0.7775	0.7034	0.0004
Treatment F	0.090	0.109	0.931	2.000	1.706	0.465	0.280	417.772
Treatment Prob(F)	0.7926	0.7728	0.4058	0.2522	0.2827	0.5444	0.6333	0.0003

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

(Bean8-11)

University of Delaware

Potential of Hooded Applications for Pigweed Control in Lima Bean

Trial ID: Bean8-11 Cooperator:
Location: Field #18 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Lima Bean **PHSLU** **Variety:** Cypress
Planting Date: 05/23/11 **Planting Method:** Row- Unit Planter **Depth:** 0.75 in
Rate: 3 Sd/row-ft **Row Spacing:** 30 in **Seed Bed:** Medium
Soil Temperature: 81 F **Soil Moisture:** Moist **Emergence Date:** 05/29/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	05/24/11	Spartan Charge	3.5	L	3.75	fl oz/A
2.	05/24/11	Dual II Magnum	7.64	E	1	pt/A

SOIL DESCRIPTION

% Sand: 81 **% OM:** 1.3 **Texture:** loamy sand
% Silt: 12 **pH:** 5.7
% Clay: 7 **CEC:** 4.6 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.4 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	06/23/11
Time of Day:	3:30 pm
Application Method:	Spray
Application Timing:	POST
Applic. Placement:	BanDir
Air Temp., Unit:	82 F
% Relative Humidity:	69
Wind Velocity, Unit:	3 mph
Wind Direction:	West
Dew Presence (Y/N):	N
Soil Temp., Unit:	82 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	90

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code:	PHSLU
Growth Stage:	run/prebud
Height, Unit:	12 in
Crop Health:	Good

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Backpack
Operating Pressure:	18.5 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzles/Row:	2
Band Width, Unit:	16 in
Boom Length, Unit:	1 nozl
Boom Height, Unit:	2 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	CO2

Trial Comments

6-23-11 Both sides of the middle 2 rows were sprayed with a single nozzle hooded hand-boom. The height of the boom was adjusted for each treatment.

Potential of Hooded Applications for Pigweed Control in Lima Bean

Trial ID: Bean8-11 Cooperator:
 Location: Field #18 Investigator: Mark VanGessel

Crop Code							PHSLU	PHSLU
Weed or Crop Name							Lima	Lima
Weed or Crop Name							Bean	Bean
Rating Data Type							Burning	Stunting
Rating Unit							%	%
Rating Date							06/26/11	07/08/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code		
1	Untreated Check						0.0 d	0.0 f
2	Aim.....carfentrazone Nonionic Surfactant 2 inches from crop row	2 EW 100 L		0.0156 lb ai/A 0.25 % v/v	POST POST	A A	22.3 bc	8.0 d
3	Aim.....carfentrazone Nonionic Surfactant 4 inches from crop row	2 EW 100 L		0.0156 lb ai/A 0.25 % v/v	POST POST	A A	36.7 a	20.0 ab
4	Aim.....carfentrazone Nonionic Surfactant 2 inches from crop row	2 EW 100 L		0.0312 lb ai/A 0.25 % v/v	POST POST	A A	28.3 ab	14.0 c
5	Aim.....carfentrazone Nonionic Surfactant 4 inches from crop row	2 EW 100 L		0.0312 lb ai/A 0.25 % v/v	POST POST	A A	36.7 a	23.3 a
6	Aim.....carfentrazone Nonionic Surfactant 4 inches from crop row 4-6" high / Drift potential	2 EW 100 L		0.0312 lb ai/A 0.25 % v/v	POST POST	A A		0.0 f
7	Cadet Nonionic Surfactant 2 inches from crop row	0.91 EC 100 L		0.0064 lb ai/A 0.25 % v/v	POST POST	A A	18.0 c	0.0 f
8	Cadet Nonionic Surfactant 4-6" high / Drift potential	0.91 EC 100 L		0.0064 lb ai/A 0.25 % v/v	POST POST	A A	16.3 c	2.3 ef
9	Vida.....pyraflufen Nonionic Surfactant 4-6" high / Drift potential	0.208 EC 100 L		.00162 lb ai/A 0.25 % v/v	POST POST	A A	28.3 ab	5.7 de
10	Spartan Charge Premix Nonionic Surfactant 4-6" high / Drift potential Spartan.....sulfentrazone Aim.....carfentrazone	3.5 F 100 L 4 F 2 EW		0.155 lb ai/A 0.25 % v/v 0.0923 lb ai/A 0.0103 lb ai/A	POST POST POST POST	A A A A	30.0 ab	16.7 bc
LSD (P=.05)							8.40	5.17
Standard Deviation							4.85	3.01
CV							20.16	33.48
Replicate F							1.081	3.700
Replicate Prob(F)							0.3627	0.0451
Treatment F							16.995	26.052
Treatment Prob(F)							0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Sulfentrazone in Heavy Trash Fields
 After Small Grain Harvest
 Trial ID: Bean11-11 Cooperator:
 Location: Field #30 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Lima Bean **PHSLU** **Variety:** Cypress
Planting Date: 07/13/11 **Planting Method:** Row- Unit Planter **Depth:** 1 in
Rate: 3 Sd/row-ft **Row Spacing:** 30 in **Seed Bed:** Firm/Trashy
Soil Temperature: 90 F **Soil Moisture:** Fair **Emergence Date:** 07/19/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Wheat Stubble

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	07/26/11	Basagran	4	L	1	pt/A
2.	07/26/11	Raptor	1	AS	4	fl oz/A
3.	07/26/11	Nonionic Surfactant			0.25	% v/v

SOIL DESCRIPTION

% Sand: 83 **% OM:** 1.1 **Texture:** loamy sand
% Silt: 8 **pH:** 5.7
% Clay: 9 **CEC:** 4.3 **Fert. Level:** Medium

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.4 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	07/13/11
Time of Day:	3:15 pm
Application Method:	Spray
Application Timing:	PRE
Applic. Placement:	Brdcst
Air Temp., Unit:	90 F
% Relative Humidity:	42
Wind Velocity, Unit:	2 mph
Wind Direction:	Northwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	90 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Dry
Leaf Surf. Moisture:	N/A
% Cloud Cover:	50

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

7/22/11 - Beans at unifoliate stage

9/22/11 Grasses only observed in untreated check (large crabgrass and fall panicum)
 Morningglory density was light and variable.
 Stunting was variable in the field.

Sulfentrazone in Heavy Trash Fields After Small Grain Harvest Trial ID: Bean11-11 Cooperator: Location: Field #30 Investigator: Mark VanGessel											
Weed Code					PHSLU	PHSLU	AMAPA	IPOSS			
Crop Code					Lima	Lima	Palmer	Morngrly			
Weed or Crop Name					Bean	Bean	Amaranth	Species			
Weed or Crop Name					Stunting	Stunting	Density	0=absent			
Rating Data Type					%	%	2mdl row	1=presen			
Rating Unit					07/22/11	09/20/11	09/20/11	09/20/11			
Rating Date											
Trt	Treatment	Form	Form	Rate	Grow	Appl					
No.	Name	Conc	Type	Rate	Unit	Stg	Code				
1	Untreated Check							0.0 b	0.0 a	9.3 a	0.7 a
2	Dual II Magnum..s-metolachlor	7.64 E		1.19 lb ai/A	PRE	A		8.0 a	3.3 a	1.3 b	0.3 a
3	Spartan Charge Premix	3.5 F		0.103 lb ai/A	PRE	A		15.3 a	5.7 a	0.3 b	0.0 a
	Dual II Magnum..s-metolachlor	7.64 E		1.19 lb ai/A	PRE	A					
4	Spartan Charge Premix	3.5 F		0.082 lb ai/A	PRE	A		15.7 a	8.3 a	0.7 b	0.3 a
	Dual II Magnum..s-metolachlor	7.64 E		1.19 lb ai/A	PRE	A					
5	Spartan Charge Premix	3.5 F		0.077 lb ai/A	PRE	A		12.3 a	2.7 a	2.0 b	0.7 a
	Dual II Magnum..s-metolachlor	7.64 E		1.19 lb ai/A	PRE	A					
6	Spartan Charge Premix	3.5 F		0.082 lb ai/A	PRE	A		10.7 a	3.3 a	0.0 b	0.0 a
	Pursuit.....imazethapyr	2 AS		0.0312 lb ai/A	PRE	A					
	Dual II Magnum..s-metolachlor	7.64 E		1.19 lb ai/A	PRE	A					
LSD (P=.05)								7.96	8.23	4.27	0.88
Standard Deviation								4.38	4.52	2.35	0.48
CV								42.37	116.3	103.17	144.91
Replicate F								0.496	0.263	3.390	0.714
Replicate Prob(F)								0.6234	0.7736	0.0752	0.5129
Treatment F								5.315	1.178	6.771	1.143
Treatment Prob(F)								0.0122	0.3847	0.0053	0.3993

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Effect of Air Temperature on Burndown Activity

Trial ID: Brndwn1-11 Cooperator:
 Location: Field # Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Volunteer Rye	SECCE	Secale cereale L.
2.	Winter Annual Broadleaves	ANNBR	
3.	Whitlowgrass	ERPVE	Draba verna L.
4.	Purselane Speedwell	VERPG	Veronica peregrinia L.
5.	Jagged Chickweed	HLOUM	Holosteum umbellatum L.
6.	Henbit	LAMAM	Lamium amplexicaule L.
7.	Mouseear Chickweed	CERVU	Cerastium vulgatum L.
8.	Knawel	SCRAN	Scleranthus annuus L.

Crop 1: Non-Crop

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** FACTORIAL
Tillage Type: Conventional Tillage
Trial Initiation Comments: A Rye cover crop was seeded in the late fall.

SOIL DESCRIPTION

% Sand: 80 **% OM:** 0.8 **Texture:** sandy loam
% Silt: 10 **pH:** 6.3
% Clay: 10 **CEC:** 4.9 **Fert. Level:** Medium

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A	B
Application Date:	03/03/11	04/06/11
Time of Day:	1:30 pm	11:50 am
Application Method:	Spray	Spray
Application Timing:	45F	55F
Applic. Placement:	Brdcst	Brdcst
Air Temp., Unit:	35 F	54 F
% Relative Humidity:	35	31
Wind Velocity, Unit:	4 mph	4 mph
Wind Direction:	Southeast	Southwest
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	34 F	50 F
Soil Surf. Moisture:	Moist	Moist
Root Zone Moisture:	Moist	Wet
Leaf Surf. Moisture:	Dry	Dry
% Cloud Cover:	0	0

WEED STAGE AT EACH APPLICATION		
	A	B
Weed 1 Code:	SECCE	SECCE
Growth Stage:	2-tiller	2-3 tiller
Height, Unit:	1.5 in	5 in
Density,Unit:	15-100 m2	15-100 m2
Weed 2 Code:	ANNBR	ANNBR
Growth Stage:	cot-veg	
Height, Unit:	0.4 in	
Density,Unit:	50-200 m2	
Weed 3 Code:	ERPVE	ERPVE
Growth Stage:		flower
Height, Unit:		3 in
Density,Unit:		50 m2
Weed 4 Code:	VERPG	VERPG
Growth Stage:		vegetative
Height, Unit:		1.5 in
Density,Unit:		0-12 m2
Weed 5 Code:	HLOUM	HLOUM
Growth Stage:		eaFlowr
Height, Unit:		1.5 in
Density,Unit:		25 m2
Weed 6 Code:	LAMAM	LAMAM
Growth Stage:		vegetative
Height, Unit:		2 in
Density,Unit:		0-12 m2
Weed 7 Code:	CERVU	CERVU
Growth Stage:		vegetative
Height, Unit:		2 in
Density,Unit:		0-4 m2
Weed 8 Code:	SCRAN	SCRAN
Growth Stage:		vegetative
Height, Unit:		1 in
Density,Unit:		0-1 m2

APPLICATION EQUIPMENT		
	A	B
Appl. Equipment:	Backpack	Backpack
Operating Pressure:	31 psi	31 psi
Nozzle Type:	AIRMIX	AIRMIX
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	18 in	18 in
Boom Length, Unit:	6 nozl	6 nozl
Boom Height, Unit:	17 in	18 in
Ground Speed, Unit:	3 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	20 gpa	20 gpa
Propellant:	CO2	CO2

Trial Comments

5/9/11 - Ratings for purslane speedwell are based on written comments and notes:
 0 = none, 1 = poor, 2 = fair, 3 = good, 4 = excellent.

Effect of Air Temperature on Burndown Activity													
Trial ID: Brndwn1-11		Cooperator:											
Location: Field #		Investigator: Mark VanGessel											
Weed Code	Crop Code	Weed or Crop Name	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date	SECCE Winter Rye Injury %	CARHI Hairy Bittcrs Control %	LAMAM Henbit 1=presnt 0=absent	VERPG Purslane Speedwll 1=presnt 0=absent	SECCE Winter Rye Injury %	OEOLA Cutleaf EPrimse Control %	
Trt	Treatment	Form	Form	Rate	Grow	Appl	04/21/11	04/21/11	04/21/11	04/21/11	05/09/11	05/09/11	
No.	Name	Conc	Type	Rate	Unit	Stg	Code						
1	Mirage.....glyphosate Nonionic Surfactant Low Rate Air Temp. 45F	3 AS 100 L		0.56 lb ae/A 0.25 % v/v	45F 45F	A A		93.0 ab	36.7 b	0.33 bc	0.0 a	97.5 a	3.2 d
2	Mirage.....glyphosate Nonionic Surfactant Low Rate Air Temp. 55F	3 AS 100 L		0.56 lb ae/A 0.25 % v/v	55F 55F	B B		97.7 a	46.7 b	0.83 ab	0.0 a	100.0 a	64.9 ab
3	Mirage.....glyphosate Nonionic Surfactant Standard Rate Air Temp. 45F	3 AS 100 L		0.75 lb ae/A 0.25 % v/v	45F 45F	A A		96.0 a	50.0 b	0.50 abc	0.0 a	99.3 a	4.9 d
4	Mirage.....glyphosate Nonionic Surfactant Standard Rate Air Temp. 55F	3 AS 100 L		0.75 lb ae/A 0.25 % v/v	55F 55F	B B		97.7 a	46.7 b	0.50 abc	0.0 a	94.7 a	68.0 ab
5	Gramoxone Inteon..paraquat Nonionic Surfactant Low Rate Air Temp. 45F	2 SL 100 L		0.35 lb ai/A 0.25 % v/v	45F 45F	A A		86.7 b	53.3 ab	0.67 ab	0.7 a	94.3 a	53.3 bc
6	Gramoxone Inteon..paraquat Nonionic Surfactant Low Rate Air Temp. 55F	2 SL 100 L		0.35 lb ai/A 0.25 % v/v	55F 55F	B B		96.0 a	50.0 b	1.00 a	0.7 a	100.0 a	73.3 ab
7	Gramoxone Inteon..paraquat Nonionic Surfactant Standard Rate Air Temp. 45F	2 SL 100 L		0.47 lb ai/A 0.25 % v/v	45F 45F	A A		93.0 ab	56.7 ab	1.00 a	0.3 a	99.0 a	25.0 cd
8	Gramoxone Inteon..paraquat Nonionic Surfactant Standard Rate Air Temp. 55F	2 SL 100 L		0.47 lb ai/A 0.25 % v/v	55F 55F	B B		89.7 ab	76.7 a	1.00 a	0.3 a	95.0 a	100.0 a
9	Gramoxone Inteon..paraquat Nonionic Surfactant	2 SL 100 L		0.6 lb ai/A 0.25 % v/v	45F 45F	A A		96.0 a	60.0 ab	1.00 a	0.7 a	100.0 a	20.0 cd
10	Untreated Check							0.0 c	0.0 c	0.00 c	0.0 a	0.0 b	0.0 d
LSD (P=.05)								8.51	25.42	0.597	0.64	7.79	37.99
Standard Deviation								4.96	14.82	0.348	0.37	4.52	21.14
CV								5.86	31.09	50.97	138.82	5.14	51.23
Replicate F								1.791	0.562	1.305	3.162	0.634	1.710
Replicate Prob(F)								0.1953	0.5800	0.2955	0.0665	0.5423	0.2256
Treatment F								109.258	5.331	2.969	2.054	140.971	8.272
Treatment Prob(F)								0.0001	0.0013	0.0236	0.0926	0.0001	0.0009

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

						LAMAM	VERPG
						Henbit	Purslane
						Control	Speedwll
						%	Control
						05/09/11	Rating
						05/09/11	05/09/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Grow Stg	Appl Code	
1	Mirage.....glyphosate Nonionic Surfactant Low Rate Air Temp. 45F	3	AS	0.56 lb ae/A	45F	A	31.5 a
		100	L	0.25 % v/v	45F	A	0.5 bc
2	Mirage.....glyphosate Nonionic Surfactant Low Rate Air Temp. 55F	3	AS	0.56 lb ae/A	55F	B	66.7 a
		100	L	0.25 % v/v	55F	B	1.9 ab
3	Mirage.....glyphosate Nonionic Surfactant Standard Rate Air Temp. 45F	3	AS	0.75 lb ae/A	45F	A	48.3 a
		100	L	0.25 % v/v	45F	A	-0.1 c
4	Mirage.....glyphosate Nonionic Surfactant Standard Rate Air Temp. 55F	3	AS	0.75 lb ae/A	55F	B	70.0 a
		100	L	0.25 % v/v	55F	B	2.7 a
5	Gramoxone Inteon..paraquat Nonionic Surfactant Low Rate Air Temp. 45F	2	SL	0.35 lb ai/A	45F	A	73.3 a
		100	L	0.25 % v/v	45F	A	0.4 bc
6	Gramoxone Inteon..paraquat Nonionic Surfactant Low Rate Air Temp. 55F	2	SL	0.35 lb ai/A	55F	B	70.0 a
		100	L	0.25 % v/v	55F	B	2.9 a
7	Gramoxone Inteon..paraquat Nonionic Surfactant Standard Rate Air Temp. 45F	2	SL	0.47 lb ai/A	45F	A	65.1 a
		100	L	0.25 % v/v	45F	A	0.5 bc
8	Gramoxone Inteon..paraquat Nonionic Surfactant Standard Rate Air Temp. 55F	2	SL	0.47 lb ai/A	55F	B	58.3 a
		100	L	0.25 % v/v	55F	B	1.4 abc
9	Gramoxone Inteon..paraquat Nonionic Surfactant	2	SL	0.6 lb ai/A	45F	A	66.7 a
		100	L	0.25 % v/v	45F	A	0.7 bc
10	Untreated Check						0.0 a
							0.1 c
LSD (P=.05)						49.72	1.66
Standard Deviation						28.58	0.88
CV						51.96	80.75
Replicate F						0.024	0.665
Replicate Prob(F)						0.9764	0.5406
Treatment F						1.957	4.448
Treatment Prob(F)						0.1202	0.0236

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code													
Crop Code													
Weed or Crop Name													
Weed or Crop Name													
Rating Data Type													
Rating Unit													
Rating Date													
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit								
TABLE OF ABC MEANS													
1	Mirage	3	AS	0.56 lb ae/A		93.0	36.7	0.33	0.0	97.5	3.2	31.5	0.5
1 Low Rate													
1 Air Temp. 45F													
2	Gramox. Inteon	2	SL	0.35 lb ai/A		86.7	53.3	0.67	0.7	94.3	53.3	73.3	0.4
1 Low Rate													
1 Air Temp. 45F													
1	Mirage	3	AS	0.75 lb ae/A		96.0	50.0	0.50	0.0	99.3	4.9	48.3	-0.1
2 Standard Rate													
1 Air Temp. 45F													
2	Gramox. Inteon	2	SL	0.47 lb ai/A		93.0	56.7	1.00	0.3	99.0	25.0	65.1	0.5
2 Standard Rate													
1 Air Temp. 45F													
1	Mirage	3	AS	0.56 lb ae/A		97.7	46.7	0.83	0.0	100.0	64.9	66.7	1.9
1 Low Rate													
2 Air Temp. 55F													
2	Gramox. Inteon	2	SL	0.35 lb ai/A		96.0	50.0	1.00	0.7	100.0	73.3	70.0	2.9
1 Low Rate													
2 Air Temp. 55F													
1	Mirage	3	AS	0.75 lb ae/A		97.7	46.7	0.50	0.0	94.7	68.0	70.0	2.7
2 Standard Rate													
2 Air Temp. 55F													
2	Gramox. Inteon	2	SL	0.47 lb ai/A		89.7	76.7	1.00	0.3	95.0	100.0	58.3	1.4
2 Standard Rate													
2 Air Temp. 55F													

Effect of Air Temperature on Burndown Activity

Trial ID: Brndwn1-11 Cooperator:
 Location: Field # Investigator: Mark VanGessel

FACTORIAL/POOLED ERROR AOV For SECCE Winter Rye Injury % 04/21/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	23	802.958333				
R	2	63.583333	31.791667	1.077	0.3671	5.8
A	1	135.375000	135.375000	4.588	0.0503	4.8
B	1	3.375000	3.375000	0.114	0.7402	4.8
AB	1	3.375000	3.375000	0.114	0.7402	6.7
C	1	57.041667	57.041667	1.933	0.1861	4.8
AC	1	0.041667	0.041667	0.001	0.9706	6.7
BC	1	92.041667	92.041667	3.119	0.0992	6.7
ABC	1	35.041667	35.041667	1.188	0.2942	9.5
ERROR	14	413.083333	29.505952			

FACTORIAL/POOLED ERROR AOV For CARHI Hairy Bittcrs Control % 04/21/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	23	6395.833333				
R	2	408.333333	204.166667	0.896	0.4305	16.2
A	1	1204.166667	1204.166667	5.282	0.0375	13.2
B	1	704.166667	704.166667	3.089	0.1007	13.2
AB	1	104.166667	104.166667	0.457	0.5101	18.7
C	1	204.166667	204.166667	0.896	0.3600	13.2
AC	1	37.500000	37.500000	0.164	0.6912	18.7
BC	1	37.500000	37.500000	0.164	0.6912	18.7
ABC	1	504.166667	504.166667	2.211	0.1592	26.4
ERROR	14	3191.666667	227.976190			

FACTORIAL/POOLED ERROR AOV For LAMAM Henbit 1=presnt 0=absent 04/21/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	23	3.989583				
R	2	0.395833	0.197917	1.317	0.2992	0.42
A	1	0.843750	0.843750	5.614	0.0327	0.34
B	1	0.010417	0.010417	0.069	0.7962	0.34
AB	1	0.093750	0.093750	0.624	0.4428	0.48
C	1	0.260417	0.260417	1.733	0.2092	0.34
AC	1	0.010417	0.010417	0.069	0.7962	0.48
BC	1	0.260417	0.260417	1.733	0.2092	0.48
ABC	1	0.010417	0.010417	0.069	0.7962	0.68
ERROR	14	2.104167	0.150298			

FACTORIAL/POOLED ERROR AOV For VERPG Purslane Speedwll 1=presnt 0=absent 04/21/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	23	4.500000				
R	2	1.000000	0.500000	4.200	0.0373	0.4
A	1	1.500000	1.500000	12.600	0.0032	0.3
B	1	0.166667	0.166667	1.400	0.2564	0.3
AB	1	0.166667	0.166667	1.400	0.2564	0.4
C	1	0.000000	0.000000	0.000	1.0000	0.3
AC	1	0.000000	0.000000	0.000	1.0000	0.4
BC	1	0.000000	0.000000	0.000	1.0000	0.4
ABC	1	0.000000	0.000000	0.000	1.0000	0.6
ERROR	14	1.666667	0.119048			

FACTORIAL/POOLED ERROR AOV For SECCE Winter Rye Injury % 05/09/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	23	500.851341				
R	2	32.414613	16.207307	0.665	0.5298	5.3
A	1	3.716574	3.716574	0.152	0.7020	4.3
B	1	5.457317	5.457317	0.224	0.6434	4.3
AB	1	3.716574	3.716574	0.152	0.7020	6.1
C	1	0.086936	0.086936	0.004	0.9532	4.3
AC	1	5.457317	5.457317	0.224	0.6434	6.1
BC	1	106.494284	106.494284	4.370	0.0553	6.1
ABC	1	2.309165	2.309165	0.095	0.7628	8.6
ERROR	14	341.198559	24.371326			

FACTORIAL/POOLED ERROR AOV For OEOLA Cutleaf EPrimrse Control % 05/09/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	23	29377.962270				
R	2	917.079411	458.539705	2.054	0.1652	16.0
A	1	4599.231063	4599.231063	20.600	0.0005	13.1
B	1	3.867998	3.867998	0.017	0.8972	13.1
AB	1	15.911343	15.911343	0.071	0.7934	18.5
C	1	18113.877244	18113.877244	81.130	0.0001	13.1
AC	1	333.285222	333.285222	1.493	0.2420	18.5
BC	1	1192.380223	1192.380223	5.341	0.0366	18.5
ABC	1	1076.564859	1076.564859	4.822	0.0455	26.2
ERROR	14	3125.764907	223.268922			

FACTORIAL/POOLED ERROR AOV For LAMAM Henbit Control % 05/09/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	23	14620.184764				
R	2	164.390352	82.195176	0.112	0.8947	29.0
A	1	948.864744	948.864744	1.295	0.2742	23.7
B	1	0.034237	0.034237	0.000	0.9946	23.7
AB	1	602.818014	602.818014	0.823	0.3797	33.5
C	1	819.954067	819.954067	1.119	0.3080	23.7
AC	1	1681.808247	1681.808247	2.296	0.1520	33.5
BC	1	107.977835	107.977835	0.147	0.7068	33.5
ABC	1	38.206979	38.206979	0.052	0.8227	47.4
ERROR	14	10256.130290	732.580735			

FACTORIAL/POOLED ERROR AOV For VERPG Purslane Speedwll Control Rating 05/09/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	23	33.507669				
R	2	1.712531	0.856266	2.508	0.1172	0.6
A	1	0.016325	0.016325	0.048	0.8301	0.5
B	1	0.532630	0.532630	1.560	0.2321	0.5
AB	1	1.002386	1.002386	2.936	0.1087	0.7
C	1	21.866957	21.866957	64.052	0.0001	0.5
AC	1	0.237668	0.237668	0.696	0.4181	0.7
BC	1	0.011999	0.011999	0.035	0.8540	0.7
ABC	1	3.347697	3.347697	9.806	0.0074	1.0
ERROR	14	4.779477	0.341391			

Comparison of Formulations and Tankmixes on Early Burndown Efficacy

Trial ID: Brndwn2-11 Cooperator:
Location: Field #22 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel Title: Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy City: Georgetown State: DE Zip Code: 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Whitlowgrass	ERPVE	Draba verna L.
2.	Purselane Speedwell	VERPG	Veronica peregrinia L.
3.	Jagged Chickweed	HLOUM	Holosteum umbellatum L.
4.	Henbit	LAMAM	Lamium amplexicaule L.
5.	Mouseear Chickweed	CERVU	Cerastium vulgatum L.
6.	Knawel	SCRAN	Scleranthus annuus L.
7.	Volunteer Rye	SECCE	Secale cereale L.

Crop 1: Non-Crop

SITE AND DESIGN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3
Site Type: Field Study Design: RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage

SOIL DESCRIPTION

% Sand: 80 % OM: 0.8 Texture: sandy loam
% Silt: 10 pH: 6.3
% Clay: 10 CEC: 4.9 Fert. Level: Medium

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 Unit: mi

APPLICATION DESCRIPTION

	A
Application Date:	04/06/11
Time of Day:	10:30 am
Application Method:	Spray
Application Timing:	EPP
Applic. Placement:	Brdcst
Air Temp., Unit:	50 F
% Relative Humidity:	31
Wind Velocity, Unit:	3 mph
Wind Direction:	West
Dew Presence (Y/N):	Y
Soil Temp., Unit:	48 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Wet
Leaf Surf. Moisture:	Moist
% Cloud Cover:	0

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	ERPVE
Growth Stage:	flower
Height, Unit:	3 in
Density,Unit:	50 m2
Weed 2 Code:	VERPG
Growth Stage:	vegetative
Height, Unit:	1.5 in
Density,Unit:	0-12 m2
Weed 3 Code:	HLOUM
Growth Stage:	eaFlowr
Height, Unit:	1.5 in
Density,Unit:	25 m2
Weed 4 Code:	LAMAM
Growth Stage:	vegetative
Height, Unit:	2 in
Density,Unit:	0-12 m2
Weed 5 Code:	CERVU
Growth Stage:	vegetative
Height, Unit:	2 in
Density,Unit:	0-4 m2
Weed 6 Code:	SCRAN
Growth Stage:	vegetative
Height, Unit:	1 in
Density,Unit:	0-4 m2
Weed 7 Code:	SECCE
Growth Stage:	2-3 tiller
Height, Unit:	5 in
Density,Unit:	15-100 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	18 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Comparison of Formulations and Tankmixes on Early Burndown Efficacy

Trial ID: Brndwn2-11 Cooperator:
 Location: Field #22 Investigator: Mark VanGessel

Weed Code							SECCE	CARHI	LAMAM	SECCE	LAMAM
Crop Code							Winter	Hairy	Henbit	Winter	Henbit
Weed or Crop Name							Rye	Bittrcrs	Control	Rye	Control
Weed or Crop Name							Injury	Control	Control	Injury	Control
Rating Data Type							%	%	%	%	%
Rating Unit							04/21/11	04/21/11	04/21/11	05/09/11	05/09/11
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Code				
1	Untreated Check							0.0 f	0.0 e	0.0 d	0.0 d
2	Mirage.....glyphosate	3 AS		0.56 lb ae/A	EPP A			99.0 a	40.0 d	46.7 c	98.7 a
	Nonionic Surfactant	100 L		0.25 % v/v	EPP A						56.7 b
3	Mirage.....glyphosate	3 AS		0.56 lb ae/A	EPP A			92.0 ab	90.7 ab	94.7 ab	100.0 a
	Atrazine 4L	4 L		1 lb ai/A	EPP A						
	Nonionic Surfactant	100 L		0.25 % v/v	EPP A						
4	Gramoxone Inteon..paraquat	2 SL		0.35 lb ai/A	EPP A			80.0 b	60.0 c	43.3 c	83.7 a
	Nonionic Surfactant	100 L		0.25 % v/v	EPP A						23.3 c
5	Mirage.....glyphosate	3 AS		0.56 lb ae/A	EPP A			96.3 a	77.7 b	90.7 ab	99.0 a
	Valor SX.....flumioxazin	51 WG		0.096 lb ai/A	EPP A						100.0 a
	Nonionic Surfactant	100 L		0.25 % v/v	EPP A						
6	Gramoxone Inteon..paraquat	2 SL		0.35 lb ai/A	EPP A			80.0 b	95.3 a	92.3 ab	86.0 a
	Sencor.....metribuzin	75 DF		0.234 lb ai/A	EPP A						100.0 a
	Nonionic Surfactant	100 L		0.25 % v/v	EPP A						
7	Gramoxone Inteon..paraquat	2 SL		0.35 lb ai/A	EPP A			88.3 ab	95.3 a	95.3 ab	97.3 a
	Atrazine 4L	4 L		1 lb ai/A	EPP A						100.0 a
	Nonionic Surfactant	100 L		0.25 % v/v	EPP A						
8	Valor SX.....flumioxazin	51 WG		0.096 lb ai/A	EPP A			56.7 c	76.7 b	87.0 b	18.3 c
	Nonionic Surfactant	100 L		0.25 % v/v	EPP A						99.7 a
9	Sencor.....metribuzin	75 DF		0.234 lb ai/A	EPP A			30.0 e	86.7 ab	95.3 ab	6.7 cd
	Nonionic Surfactant	100 L		0.25 % v/v	EPP A						100.0 a
10	Atrazine 4L	4 L		1 lb ai/A	EPP A			43.3 d	83.3 ab	96.3 a	36.7 b
	Nonionic Surfactant	100 L		0.25 % v/v	EPP A						99.7 a
LSD (P=.05)							12.71	16.47	8.94	17.90	16.82
Standard Deviation							7.41	9.60	5.21	10.43	9.80
CV							11.13	13.61	7.03	16.66	12.58
Replicate F							0.336	6.027	4.158	0.698	2.103
Replicate Prob(F)							0.7191	0.0099	0.0328	0.5104	0.1511
Treatment F							59.682	29.527	119.963	48.680	44.682
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Evaluation Additives for Gramoxone for Burndown

Trial ID: Brndwn4-11 Cooperator:
 Location: UD-REC Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Knawel	SCRAN	Scleranthus annuus L.
2.	Mouseear Chickweed	CERVU	Cerastium vulgatum L.
3.	Field Pansy	VIORA	Viola rafinesquii Greene
4.	Wild Garlic	ALLVI	Allium vineale L.
5.	Vetch species	VICSS	Vicia Ssp.
6.	Redstem Filaree	EROCI	Erodium cicutarium (L.) L'Her. ex Ait.
7.	Cutleaf Evening Primrose	OEOLA	Oenothera laciniata Hill

Crop 1: Non-Crop

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage

SOIL DESCRIPTION

% Sand: 83 **% OM:** 1.4 **Texture:** loamy sand
% Silt: 8 **pH:** 5.4
% Clay: 9 **CEC:** 6.1 **Fert. Level:** Optimum

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.1 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	04/25/11
Time of Day:	2:30 pm
Application Method:	Spray
Application Timing:	Spring
Applic. Placement:	Brdcst
Air Temp., Unit:	84 F
% Relative Humidity:	51
Wind Velocity, Unit:	4 mph
Wind Direction:	Southwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	80 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	15

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	SCRAN
Growth Stage:	vegetative
Height, Unit:	3 in
Density,Unit:	400 m2
Weed 2 Code:	CERVU
Growth Stage:	seed
Height, Unit:	6 in
Density,Unit:	0-120 m2
Weed 3 Code:	VIORA
Growth Stage:	flower
Height, Unit:	4 in
Density,Unit:	2-10 m2
Weed 4 Code:	ALLVI
Growth Stage:	vegetative
Height, Unit:	12 in
Density,Unit:	0-40 2m
Weed 5 Code:	VICSS
Growth Stage:	flower
Height, Unit:	9 in
Density,Unit:	0-25 m2
Weed 6 Code:	EROCI
Growth Stage:	ea flower
Height, Unit:	15 in
Density,Unit:	0-4 m2
Weed 7 Code:	OEOLA
Growth Stage:	rosette
Height, Unit:	6 in
Density,Unit:	0-4 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Backpack
Operating Pressure:	31 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	24 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	CO2

Trial Comments

5/20/11 - Excellent control with all treatments (> 97%) of knawel, redstem filaree, field pansy, and vetch.

Evaluation Additives for Gramoxone for Burndown						
Trial ID: Brndwn4-11 Cooperator:						
Location: UD-REC Investigator: Mark VanGessel						
Weed Code						OEOLA
Weed or Crop Name						Cutleaf
Weed or Crop Name						EPrimrse
Rating Data Type						Control
Rating Unit						%
Rating Date						05/20/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg Code
1	Untreated Check					0.0 b
2	Gramoxone Inteon..paraquat	2 SL		0.375 lb ai/A	Spring	A
	Nonionic Surfactant	100 L		0.25 % v/v	Spring	A
3	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Spring	A
	Nonionic Surfactant	100 L		0.25 % v/v	Spring	A
4	Gramoxone Inteon..paraquat	2 SL		0.625 lb ai/A	Spring	A
	Nonionic Surfactant	100 L		0.25 % v/v	Spring	A
5	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Spring	A
	Nonionic Surfactant	100 L		0.25 % v/v	Spring	A
	30% Urea Ammonium Nitrate	100 L		2 % v/v	Spring	A
6	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Spring	A
	Crop Oil Concentrate	100 L		25 lb ai/A	Spring	A
LSD (P=.05)						19.27
Standard Deviation						10.59
CV						25.09
Replicate F						0.347
Replicate Prob(F)						0.7153
Treatment F						12.317
Treatment Prob(F)						0.0005

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Comparison of Herbicide-Resistant Soybeans for No-Till Weed Management

Trial ID: DSB1a-11 Cooperator: Delaware Soybean Board
 Location: Field # Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Palmer Amaranth	AMAPA	Amaranthus palmeri S.Wats.
2.	Morningglory Species	IPOSS	Ipomoea sp.

Crop 1: Soybean **GLXMA** **Variety:** LL499N; RT4996N-STS
Planting Date: 05/16/11 **Planting Method:** Drilled **Depth:** 1 in
Rate: 2 Sd/row-ft **Row Spacing:** 7 in **Seed Bed:** Medium/Trashy
Soil Temperature: 77 F **Soil Moisture:** Moist **Emergence Date:** 05/23/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** FACTORIAL
Tillage Type: No Tillage

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	05/06/11	Roundup WeatherMax	4.5	AS	40	fl oz/A

SOIL DESCRIPTION

% Sand: 79 **% OM:** 1.5 **Texture:** loamy sand
% Silt: 14 **pH:** 6.0
% Clay: 7 **CEC:** 5.2 **Fert. Level:** Medium

Irrigation/Type: Sprinkler - Lateral Move **Frequency:** as needed
Overall Moisture Conditions: Maintained Moist
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.3 **Unit:** mi

APPLICATION DESCRIPTION

	A	B	C
Application Date:	05/18/11	06/13/11	06/28/11
Time of Day:	9:00 am	12:30 pm	10:00 am
Application Method:	Spray	Spray	Spray
Application Timing:	PRE	4WAP	6WAP
Applic. Placement:	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	63 F	74 F	77 F
% Relative Humidity:	97	52	88
Wind Velocity, Unit:	3 mph	3 mph	4 mph
Wind Direction:	East	North	South
Dew Presence (Y/N):	Y	N	N
Soil Temp., Unit:	60 F	74 F	76 F
Soil Surf. Moisture:	Moist	Moist	Moist
Root Zone Moisture:	Moist	Moist	Moist
Leaf Surf. Moisture:	N/A	Dry	Dry
% Cloud Cover:	100	20	10

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code:	GLXMA	GLXMA	GLXMA
Growth Stage:		V5	EaFlower
Height, Unit:		7 in	14 in
Crop Health:		Good	Good

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:	AMAPA	AMAPA	AMAPA
Growth Stage:		Vegetative	
Height, Unit:		12 in	
Density, Unit:		0-200 m ²	
Weed 2 Code:	IPOSS	IPOSS	IPOSS
Growth Stage:		Vegetative	Running
Height, Unit:		4 in	18 in
Density, Unit:		0-15 m ²	4-10 m ²

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	Tractor	Tractor	Tractor
Operating Pressure:	40 psi	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	20 in	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	20 in	28 in	28 in
Ground Speed, Unit:	3 mph	3 mph	3 mph
Carrier:	water	water	water
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air	Comp. Air

Trial Comments

6/4/11 - Only PRE treatments have been applied. Not all duplicate treatments were rated.

6/25/11 - Soybean stands are poor due to deer feeding.

10/26/11 Difficult to rate or make notes of the treatment due to weeds having reached maturity. Where noted 0= no control; 1= poor control; 2= fair control; 3= good control; and 4= excellent control.

Weed Code						AMAPA	IPOSS	DIGSA	AMAPA	IPOSS	
Weed or Crop Name						Palmer	Morngrly	Large	Palmer	Morngrly	
Weed or Crop Name						Amaranth	Species	Crabgras	Amaranth	Species	
Rating Data Type						Control	Control	Control	Control	Control	
Rating Unit						%	%	%	%	%	
Rating Date						06/04/11	06/04/11	06/04/11	06/20/11	06/20/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code					
9	PRE fb LPOST (42 DAP) Conventional Soys						96.7 b	71.0 ab	100.0 a	95.0 a	20.0 bc
	Dual Magnum.....s-metolachlor	7.62 E		1.24 lb ai/A	PRE	A					
	Prowl.....pendimethalin	3.3 EC		0.72 lb ai/A	PRE	A					
	Sencor.....metribuzin	75 DF		0.14 lb ai/A	PRE	A					
	Reflex.....fomesafen	2 L		0.25 lb ai/A	6 WAP	C					
	Basagran.....bentazon	4 L		0.75 lb ai/A	6 WAP	C					
	Select Max.....clethodim	1 EC		0.125 lb ai/A	ifNeeded	C					
	Nonionic Surfactant	100 L		0.25 % v/v	6WAP	C					
10	PRE fb LPOST (42 DAP) Roundup Ready Soys						100.0 a	91.7 a	96.7 a	100.0 a	60.0 a
	Valor XLT Premix	40.3 WG		0.0756 lb ai/A	PRE	A					
	Glyphosate	3 L		0.75 lb ae/A	6 WAP	C					
11	PRE fb LPOST (42 DAP) Liberty-Link Soys						100.0 a	66.7 ab	100.0 a	100.0 a	40.0 ab
	Prefix Premix	5.3 E		1.33 lb ai/A	PRE	A					
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A	6 WAP	C					
	Dry Ammonium Sulfate	100 D		1.2 % w/v	6 WAP	C					
12	PRE fb LPOST (42 DAP) STS Soys						100.0 a	66.7 ab	100.0 a	100.0 a	26.7 bc
	Prefix Premix	5.3 E		1.33 lb ai/A	PRE	A					
	Synchrony STS Premix	42 DF		0.0197 lb ai/A	6 WAP	C					
	Select Max.....clethodim	1 EC		0.125 lb ai/A	ifNeeded	C					
	Crop Oil Concentrate	100 L		1 % v/v	6WAP	C					
13	Reduced PRE fb POST (28 DAP) Conventional Soys						100.0 a	46.7 b	100.0 a		
	Dual Magnum.....s-metolachlor	7.62 E		0.83 lb ai/A	PRE	A					
	Prowl.....pendimethalin	3.3 EC		0.483 lb ai/A	PRE	A					
	Sencor.....metribuzin	75 DF		0.094 lb ai/A	PRE	A					
	Reflex.....fomesafen	2 L		0.25 lb ai/A	4 WAP	B					
	Basagran.....bentazon	4 L		0.75 lb ai/A	4 WAP	B					
	Nonionic Surfactant	100 L		0.25 % v/v	4 WAP	B					
14	Reduced PRE fb POST (28 DAP) Roundup Ready Soys						100.0 a	85.7 a	95.0 a		
	Valor XLT Premix	40.3 WG		0.0504 lb ai/A	PRE	A					
	Glyphosate	3 L		0.75 lb ae/A	4 WAP	B					
15	Reduced PRE fb POST (28 DAP) Liberty-Link Soys						100.0 a	56.7 b	100.0 a		
	Prefix Premix	5.3 E		0.86 lb ai/A	PRE	A					
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A	4 WAP	B					
	Dry Ammonium Sulfate	100 D		1.2 % w/v	4 WAP	B					
16	Reduced PRE fb POST (28 DAP) STS Soys						100.0 a	56.7 b	100.0 a		
	Prefix Premix	5.3 E		0.86 lb ai/A	PRE	A					
	Synchrony STS Premix	42 DF		0.0197 lb ai/A	4 WAP	B					
	Crop Oil Concentrate	100 L		1 % v/v	4 WAP	B					

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						AMAPA	IPOSS	DIGSA	AMAPA	IPOSS		
Weed or Crop Name						Palmer	Morninglry	Large	Palmer	Morninglry		
Weed or Crop Name						Amaranth	Species	Crabgras	Amaranth	Species		
Rating Data Type						Control	Control	Control	Control	Control		
Rating Unit						%	%	%	%	%		
Rating Date						06/04/11	06/04/11	06/04/11	06/20/11	06/20/11		
Trt	Treatment	Form	Form	Rate	Grow	Appl						
No.	Name	Conc	Type	Rate	Unit	Stg	Code					
17	Untreated Check Liberty Link Soys							0.0c	0.0c	0.0b	0.0b	0.0c
18	Liberty Link Soys							100.0a	66.7ab	100.0a	97.3a	30.0abc
	Prefix Premix	5.3E		1.33lb ai/A	PRE	A						
	Ignite 280.....glufosinate	2.34SL		0.62lb ai/A	6 WAP	C						
	Select Max.....clethodim	1EC		0.125lb ai/A	ifNeeded	C						
	Dry Ammonium Sulfate	100D		1.2% w/v	6WAP	C						
	LSD (P=.05)							3.13	28.83	5.79	7.59	33.16
	Standard Deviation							1.83	16.81	3.37	4.17	18.23
	CV							2.04	27.63	3.78	5.08	61.9
	Replicate F							1.000	0.656	0.512	0.540	2.023
	Replicate Prob(F)							0.3874	0.5310	0.6077	0.5989	0.1829
	Treatment F							894.333	6.736	259.390	279.492	3.629
	Treatment Prob(F)							0.0001	0.0003	0.0001	0.0001	0.0393

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							DIGSA	AMAPA	IPOSS	DIGSA	AMAPA
Weed or Crop Name							Large	Palmer	Morngrly	Large	Palmer
Weed or Crop Name							Crabgras	Amaranth	Species	Crabgras	Amaranth
Rating Data Type							Control	Control	Control	Control	Control
Rating Unit							%	%	%	%	Notes
Rating Date							06/20/11	06/25/11	06/25/11	06/25/11	10/26/11
Trt	Treatment	Form	Form	Rate	Grow	Appl					
No.	Name	Conc	Type	Rate	Unit	Stg	Code				
1	Total POST (28 DAP) Conventional Soys							53.3 c	89.3 a	91.7 a	3.0 a
	Reflex.....fomesafen	2L		0.25 lb ai/A	4 WAP	B					
	Basagran.....bentazon	4L		0.75 lb ai/A	4 WAP	B					
	Select Max.....clethodim	1 EC		0.125 lb ai/A	4 WAP	B					
	Nonionic Surfactant	100L		0.25 % v/v	4 WAP	B					
2	Total POST (28 DAP) Roundup Ready Soys							90.0 ab	79.3 abc	95.0 a	3.0 a
	Glyphosate	3L		0.75 lb ae/A	4 WAP	B					
3	Total POST (28 DAP) Liberty-Link Soys							36.7 d	71.7 bcd	33.3 c	2.3 b
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A	4 WAP	B					
	Dry Ammonium Sulfate	100D		1.2 % w/v	4 WAP	B					
4	Total POST (28 DAP) STS Soys							53.3 c	85.0 ab	95.0 a	3.0 a
	Synchrony STS Premix	42 DF		0.0197 lb ai/A	4 WAP	B					
	Select Max.....clethodim	1 EC		0.125 lb ai/A	4 WAP	B					
	Crop Oil Concentrate	100L		1 % v/v	4 WAP	B					
5	PRE fb POST (28 DAP) Conventional Soys							100.0 a	79.3 abc	95.0 a	3.0 a
	Dual Magnum.....s-metolachlor	7.62 E		1.24 lb ai/A	PRE	A					
	Prowl.....pendimethalin	3.3 EC		0.72 lb ai/A	PRE	A					
	Sencor.....metribuzin	75 DF		0.14 lb ai/A	PRE	A					
	Reflex.....fomesafen	2L		0.25 lb ai/A	4 WAP	B					
	Basagran.....bentazon	4L		0.75 lb ai/A	4 WAP	B					
	Nonionic Surfactant	100L		0.25 % v/v	4WAP	B					
6	PRE fb POST (28 DAP) Roundup Ready Soys							100.0 a	88.7 a	100.0 a	3.0 a
	Valor XLT Premix	40.3 WG		0.0756 lb ai/A	PRE	A					
	Glyphosate	3L		0.75 lb ae/A	4 WAP	B					
7	PRE fb POST (28 DAP) Liberty-Link Soys							100.0 a	63.3 d	95.7 a	3.0 a
	Prefix Premix	5.3 E		1.33 lb ai/A	PRE	A					
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A	4 WAP	B					
	Dry Ammonium Sulfate	100D		1.2 % w/v	4 WAP	B					
8	PRE fb POST (28 DAP) STS Soys							100.0 a	87.7 a	86.7 ab	3.0 a
	Prefix Premix	5.3 E		1.33 lb ai/A	PRE	A					
	Synchrony STS Premix	42 DF		0.0197 lb ai/A	4 WAP	B					
	Crop Oil Concentrate	100L		1 % v/v	4WAP	B					
9	PRE fb LPOST (42 DAP) Conventional Soys						100.0 a	86.0 b	36.7 e	95.7 a	3.0 a
	Dual Magnum.....s-metolachlor	7.62 E		1.24 lb ai/A	PRE	A					
	Prowl.....pendimethalin	3.3 EC		0.72 lb ai/A	PRE	A					
	Sencor.....metribuzin	75 DF		0.14 lb ai/A	PRE	A					
	Reflex.....fomesafen	2L		0.25 lb ai/A	6 WAP	C					
	Basagran.....bentazon	4L		0.75 lb ai/A	6 WAP	C					
	Select Max.....clethodim	1 EC		0.125 lb ai/A	ifNeeded	C					
	Nonionic Surfactant	100L		0.25 % v/v	6WAP	C					

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						DIGSA	AMAPA	IPOSS	DIGSA	AMAPA		
Weed or Crop Name						Large	Palmer	Morngrly	Large	Palmer		
Weed or Crop Name						Crabgras	Amaranth	Species	Crabgras	Amaranth		
Rating Data Type						Control	Control	Control	Control	Control		
Rating Unit						%	%	%	%	Notes		
Rating Date						06/20/11	06/25/11	06/25/11	06/25/11	10/26/11		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Grow Stg	Appl Code					
10	PRE fb LPOST (42 DAP) Roundup Ready Soys Valor XLT Premix Glyphosate	40.3	WG 3L	0.0756 0.75	lb ai/A lb ae/A	PRE 6 WAP	A C	83.3 b	100.0 a	66.0 cd	71.7 b	3.0 a
11	PRE fb LPOST (42 DAP) Liberty-Link Soys Prefix Premix Ignite 280.....glufosinate Dry Ammonium Sulfate	5.3 2.34 100	E SL D	1.33 0.53 1.2	lb ai/A lb ai/A % w/v	PRE 6 WAP 6 WAP	A C C	95.0 a	92.7 ab	36.7 e	85.7 ab	3.0 a
12	PRE fb LPOST (42 DAP) STS Soys Prefix Premix Synchrony STS Premix Select Max.....clethodim Crop Oil Concentrate	5.3 42 1 100	E DF EC L	1.33 0.0197 0.125 1	lb ai/A lb ai/A lb ai/A % v/v	PRE 6 WAP ifNeeded 6WAP	A C C C	98.3 a	96.0 ab	30.0 e	95.0 a	3.0 a
13	Reduced PRE fb POST (28 DAP) Conventional Soys Dual Magnum.....s-metolachlor Prowl.....pendimethalin Sencor.....metribuzin Reflex.....fomesafen Basagran.....bentazon Nonionic Surfactant	7.62 3.3 75 2 4 100	E EC DF L L L	0.83 0.483 0.094 0.25 0.75 0.25	lb ai/A lb ai/A lb ai/A lb ai/A lb ai/A % v/v	PRE PRE PRE 4 WAP 4 WAP 4 WAP	A A A B B B		100.0 a	89.0 a	98.3 a	3.0 a
14	Reduced PRE fb POST (28 DAP) Roundup Ready Soys Valor XLT Premix Glyphosate	40.3	WG 3L	0.0504 0.75	lb ai/A lb ae/A	PRE 4 WAP	A B		100.0 a	89.3 a	100.0 a	3.0 a
15	Reduced PRE fb POST (28 DAP) Liberty-Link Soys Prefix Premix Ignite 280.....glufosinate Dry Ammonium Sulfate	5.3 2.34 100	E SL D	0.86 0.53 1.2	lb ai/A lb ai/A % w/v	PRE 4 WAP 4 WAP	A B B		93.3 ab	79.3 abc	97.3 a	3.0 a
16	Reduced PRE fb POST (28 DAP) STS Soys Prefix Premix Synchrony STS Premix Crop Oil Concentrate	5.3 42 100	E DF L	0.86 0.0197 1	lb ai/A lb ai/A % v/v	PRE 4 WAP 4 WAP	A B B		100.0 a	83.7 ab	95.0 a	3.0 a
17	Untreated Check Liberty Link Soys							0.0 c	0.0 e	0.0 f	0.0 d	0.0 c
18	Liberty Link Soys Prefix Premix Ignite 280.....glufosinate Select Max.....clethodim Dry Ammonium Sulfate	5.3 2.34 1 100	E SL EC D	1.33 0.62 0.125 1.2	lb ai/A lb ai/A lb ai/A % w/v	PRE 6 WAP ifNeeded 6WAP	A C C C	100.0 a	93.3 ab	43.3 e	89.3 a	3.0 a
LSD (P=.05)						7.55	12.02	15.38	15.35	0.45		
Standard Deviation						4.15	7.21	9.23	9.21	0.27		
CV						5.22	8.68	13.86	10.9	9.73		
Replicate F						0.323	1.724	0.250	0.480	1.000		
Replicate Prob(F)						0.7315	0.1936	0.7806	0.6231	0.3784		
Treatment F						270.710	46.326	24.313	24.224	20.721		
Treatment Prob(F)						0.0001	0.0001	0.0001	0.0001	0.0001		

Means followed by same letter do not significantly differ (P=.05, LSD)

							IPOSS	DIGSA	GLXMA	
							Morngly	Large	Soybean	
Weed Code	Crop Code	Weed or Crop Name					Species	Crabgras		
Rating Data Type	Rating Unit	Rating Date					Control	Control	Yield	
							Notes	Notes	Bu/A	
							10/26/11	10/26/11	10/26/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code			
1	Total POST (28 DAP) Conventional Soys							2.7 ab	3.0 a	77.2 abc
	Reflex.....fomesafen	2L		0.25 lb ai/A		4 WAP	B			
	Basagran.....bentazon	4L		0.75 lb ai/A		4 WAP	B			
	Select Max.....clethodim	1 EC		0.125 lb ai/A		4 WAP	B			
	Nonionic Surfactant	100L		0.25 % v/v		4 WAP	B			
2	Total POST (28 DAP) Roundup Ready Soys							3.0 a	3.0 a	66.2 a-e
	Glyphosate	3L		0.75 lb ae/A		4 WAP	B			
3	Total POST (28 DAP) Liberty-Link Soys							2.3 abc	2.3 ab	70.3 a-e
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A		4 WAP	B			
	Dry Ammonium Sulfate	100D		1.2 % w/v		4 WAP	B			
4	Total POST (28 DAP) STS Soys							3.0 a	3.0 a	69.3 a-e
	Synchrony STS Premix	42DF		0.0197 lb ai/A		4 WAP	B			
	Select Max.....clethodim	1 EC		0.125 lb ai/A		4 WAP	B			
	Crop Oil Concentrate	100L		1 % v/v		4 WAP	B			
5	PRE fb POST (28 DAP) Conventional Soys							2.3 abc	2.3 ab	83.4 a
	Dual Magnum.....s-metolachlor	7.62 E		1.24 lb ai/A		PRE	A			
	Prowl.....pendimethalin	3.3 EC		0.72 lb ai/A		PRE	A			
	Sencor.....metribuzin	75DF		0.14 lb ai/A		PRE	A			
	Reflex.....fomesafen	2L		0.25 lb ai/A		4 WAP	B			
	Basagran.....bentazon	4L		0.75 lb ai/A		4 WAP	B			
	Nonionic Surfactant	100L		0.25 % v/v		4WAP	B			
6	PRE fb POST (28 DAP) Roundup Ready Soys							3.0 a	3.0 a	51.6 e
	Valor XLT Premix	40.3 WG		0.0756 lb ai/A		PRE	A			
	Glyphosate	3L		0.75 lb ae/A		4 WAP	B			
7	PRE fb POST (28 DAP) Liberty-Link Soys							1.0 d	3.0 a	75.2 a-d
	Prefix Premix	5.3 E		1.33 lb ai/A		PRE	A			
	Ignite 280.....glufosinate	2.34 SL		0.53 lb ai/A		4 WAP	B			
	Dry Ammonium Sulfate	100D		1.2 % w/v		4 WAP	B			
8	PRE fb POST (28 DAP) STS Soys							2.0 bc	1.0 c	60.8 b-e
	Prefix Premix	5.3 E		1.33 lb ai/A		PRE	A			
	Synchrony STS Premix	42DF		0.0197 lb ai/A		4 WAP	B			
	Crop Oil Concentrate	100L		1 % v/v		4WAP	B			
9	PRE fb LPOST (42 DAP) Conventional Soys							1.7 cd	3.0 a	78.8 abc
	Dual Magnum.....s-metolachlor	7.62 E		1.24 lb ai/A		PRE	A			
	Prowl.....pendimethalin	3.3 EC		0.72 lb ai/A		PRE	A			
	Sencor.....metribuzin	75DF		0.14 lb ai/A		PRE	A			
	Reflex.....fomesafen	2L		0.25 lb ai/A		6 WAP	C			
	Basagran.....bentazon	4L		0.75 lb ai/A		6 WAP	C			
	Select Max.....clethodim	1 EC		0.125 lb ai/A		ifNeeded	C			
	Nonionic Surfactant	100L		0.25 % v/v		6WAP	C			

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

							IPOSS	DIGSA	GLXMA
							Morngrly	Large	Soybean
Weed Code							Species	Crabgras	
Crop Code							Control	Control	Yield
Weed or Crop Name							Notes	Notes	Bu/A
Weed or Crop Name							10/26/11	10/26/11	10/26/11
Rating Data Type									
Rating Unit									
Rating Date									
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg	Appl Code			
10	PRE fb LPOST (42 DAP) Roundup Ready Soys Valor XLT Premix Glyphosate	40.3	WG 3L	0.0756 lb ai/A 0.75 lb ae/A	PRE 6 WAP	A C	3.0 a	3.0 a	55.0 de
11	PRE fb LPOST (42 DAP) Liberty-Link Soys Prefix Premix Ignite 280.....glufosinate Dry Ammonium Sulfate	5.3 2.34 100	E SL D	1.33 lb ai/A 0.53 lb ai/A 1.2 % w/v	PRE 6 WAP 6 WAP	A C C	3.0 a	3.0 a	84.4 a
12	PRE fb LPOST (42 DAP) STS Soys Prefix Premix Synchrony STS Premix Select Max.....clethodim Crop Oil Concentrate	5.3 42 1 100	E DF EC L	1.33 lb ai/A 0.0197 lb ai/A 0.125 lb ai/A 1 % v/v	PRE 6 WAP ifNeeded 6WAP	A C C C	2.7 ab	3.0 a	64.1 a-e
13	Reduced PRE fb POST (28 DAP) Conventional Soys Dual Magnum.....s-metolachlor Prowl.....pendimethalin Sencor.....metribuzin Reflex.....fomesafen Basagran.....bentazon Nonionic Surfactant	7.62 3.3 75 2 4 100	E EC DF L L L	0.83 lb ai/A 0.483 lb ai/A 0.094 lb ai/A 0.25 lb ai/A 0.75 lb ai/A 0.25 % v/v	PRE PRE PRE 4 WAP 4 WAP 4 WAP	A A A B B B	2.0 bc	2.7 ab	77.5 abc
14	Reduced PRE fb POST (28 DAP) Roundup Ready Soys Valor XLT Premix Glyphosate	40.3	WG 3L	0.0504 lb ai/A 0.75 lb ae/A	PRE 4 WAP	A B	2.3 abc	3.0 a	58.2 cde
15	Reduced PRE fb POST (28 DAP) Liberty-Link Soys Prefix Premix Ignite 280.....glufosinate Dry Ammonium Sulfate	5.3 2.34 100	E SL D	0.86 lb ai/A 0.53 lb ai/A 1.2 % w/v	PRE 4 WAP 4 WAP	A B B	1.0 d	2.0 b	76.4 abc
16	Reduced PRE fb POST (28 DAP) STS Soys Prefix Premix Synchrony STS Premix Crop Oil Concentrate	5.3 42 100	E DF L	0.86 lb ai/A 0.0197 lb ai/A 1 % v/v	PRE 4 WAP 4 WAP	A B B	3.0 a	1.0 c	58.1 cde
17	Untreated Check Liberty Link Soys						0.0 e	0.0 d	50.1 e
18	Liberty Link Soys Prefix Premix Ignite 280.....glufosinate Select Max.....clethodim Dry Ammonium Sulfate	5.3 2.34 1 100	E SL EC D	1.33 lb ai/A 0.62 lb ai/A 0.125 lb ai/A 1.2 % w/v	PRE 6 WAP ifNeeded 6WAP	A C C C	3.0 a	3.0 a	80.2 ab
LSD (P=.05)							0.80	0.67	21.43
Standard Deviation							0.48	0.40	12.85
CV							21.15	16.36	18.7
Replicate F							0.239	1.483	0.727
Replicate Prob(F)							0.7884	0.2412	0.4909
Treatment F							9.845	15.013	2.236
Treatment Prob(F)							0.0001	0.0001	0.0224

Comparison of Herbicide-Resistant Soybeans for No-Till Weed Management

Trial ID: DSB1a-11 Cooperator: Delaware Soybean Board

Location: Field # Investigator: Mark VanGessel

Weed Code	AMAPA	IPOSS	DIGSA	AMAPA	IPOSS	DIGSA	GLXMA Soybean
Crop Code							
Weed or Crop Name	Palmer	Mornglry	Large	Palmer	Mornglry	Large	
Weed or Crop Name	Amaranth	Species	Crabgras	Amaranth	Species	Crabgras	
Rating Data Type	Control	Control	Control	Control	Control	Control	Yield
Rating Unit	%	%	%	Notes	Notes	Notes	Bu/A
Rating Date	06/25/11	06/25/11	06/25/11	10/26/11	10/26/11	10/26/11	10/26/11
Trt Treatment	Form	Form	Rate				
No. Name	Conc	Type	Rate	Unit			
TABLE OF R MEANS							
Replicate 1	88.6	71.1	91.1	2.9	2.4	2.4	70.3
Replicate 2	89.7	72.5	89.6	3.0	2.4	2.7	65.5
Replicate 3	84.4	72.9	87.6	3.0	2.3	2.6	71.7
TABLE OF A MEANS							
1 Ttl POST 28DAP	58.3	81.3	78.8	2.8	2.8	2.8	70.8
2 PRE fb PO 28DAP	100.0	79.8	94.3	3.0	2.1	2.3	67.8
3 PRE fb LP 42DAP	93.7	42.3	87.0	3.0	2.6	3.0	70.6
4 RedPRfb PO28DAP	98.3	85.3	97.7	3.0	2.1	2.2	67.6
TABLE OF B MEANS							
1 Convent. Soys	84.8	73.6	95.2	3.0	2.2	2.8	79.2
1 Reflex	2L	0.25 lb ai/A					
1 Basagran	4L	0.75 lb ai/A					
1 Select Max	1 EC	0.125 lb ai/A					
1 Nonionic Surf.	100L	0.25 % v/v					
2 Roundup Soys	97.5	80.8	91.7	3.0	2.8	3.0	57.7
2 Glyphosate	3L	0.75 lb ae/A					
3 Liberty Soys	80.7	62.8	78.0	2.8	1.8	2.6	76.6
3 Ignite 280	2.34 SL	0.53 lb ai/A					
3 Ammonium Sulf.	100D	1.2 % w/v					
4 STS Soys	87.3	71.6	92.9	3.0	2.7	2.0	63.1
4 Synchrony STS	42 DF	0.0197 lb ai/A					
4 Select Max	1 EC	0.125 lb ai/A					
4 Crop Oil Conc.	100L	1 % v/v					
TABLE OF AB MEANS							
1 Ttl POST 28DAP	53.3	89.3	91.7	3.0	2.7	3.0	77.2
1 Convent. Soys							
1 Reflex	2L	0.25 lb ai/A					
1 Basagran	4L	0.75 lb ai/A					
1 Select Max	1 EC	0.125 lb ai/A					
1 Nonionic Surf.	100L	0.25 % v/v					
2 PRE fb PO 28DAP	100.0	79.3	95.0	3.0	2.3	2.3	83.4
1 Convent. Soys							
1 Reflex	2L	0.25 lb ai/A					
1 Basagran	4L	0.75 lb ai/A					
1 Select Max	1 EC	0.125 lb ai/A					
1 Nonionic Surf.	100L	0.25 % v/v					
3 PRE fb LP 42DAP	86.0	36.7	95.7	3.0	1.7	3.0	78.8
1 Convent. Soys							
1 Reflex	2L	0.25 lb ai/A					
1 Basagran	4L	0.75 lb ai/A					
1 Select Max	1 EC	0.125 lb ai/A					
1 Nonionic Surf.	100L	0.25 % v/v					

(DSB1a-11)

University of Delaware

Weed Code					AMAPA	IPOSS	DIGSA	AMAPA	IPOSS	DIGSA	GLXMA	
Crop Code					Palmer	Morngly	Large	Palmer	Morngly	Large	Soybean	
Weed or Crop Name					Amaranth	Species	Crabgras	Amaranth	Species	Crabgras		
Weed or Crop Name					Control	Control	Control	Control	Control	Control	Yield	
Rating Data Type					%	%	%	Notes	Notes	Notes	Bu/A	
Rating Unit					06/25/11	06/25/11	06/25/11	10/26/11	10/26/11	10/26/11	10/26/11	
Rating Date												
Trt	Treatment	Form	Form	Rate								
No.	Name	Conc	Type	Rate	Unit							
3	PRE fb LP 42DAP					96.0	30.0	95.0	3.0	2.7	3.0	64.1
4	STS Soys											
4	Synchrony STS	42	DF	0.0197	lb ai/A							
4	Select Max	1	EC	0.125	lb ai/A							
4	Crop Oil Conc.	100	L	1	% v/v							
4	RedPRfb PO28DAP					100.0	83.7	95.0	3.0	3.0	1.0	58.1
4	STS Soys											
4	Synchrony STS	42	DF	0.0197	lb ai/A							
4	Select Max	1	EC	0.125	lb ai/A							
4	Crop Oil Conc.	100	L	1	% v/v							

Comparison of Herbicide-Resistant Soybeans for No-Till Weed Management

Trial ID: DSB1a-11 Cooperator: Delaware Soybean Board

Location: Field # Investigator: Mark VanGessel

FACTORIAL/POOLED ERROR AOV For AMAPA Palmer Amaranth Control % 06/25/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	20759.666667				
R	2	246.541667	123.270833	2.336	0.1140	5.2
A	3	13947.666667	4649.222222	88.121	0.0001	6.1
B	3	1845.666667	615.222222	11.661	0.0001	6.1
AB	9	3137.000000	348.555556	6.606	0.0001	12.1
ERROR	30	1582.791667	52.759722			

FACTORIAL/POOLED ERROR AOV For IPOSS Mornnglry Species Control % 06/25/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	21623.312500				
R	2	28.625000	14.312500	0.151	0.8604	7.0
A	3	14459.062500	4819.687500	50.888	0.0001	8.1
B	3	1993.562500	664.520833	7.016	0.0010	8.1
AB	9	2300.687500	255.631944	2.699	0.0198	16.2
ERROR	30	2841.375000	94.712500			

FACTORIAL/POOLED ERROR AOV For DIGSA Large Crabgrass Control % 06/25/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	15173.812500				
R	2	95.375000	47.687500	0.508	0.6068	7.0
A	3	2542.229167	847.409722	9.026	0.0002	8.1
B	3	2168.562500	722.854167	7.699	0.0006	8.1
AB	9	7551.020833	839.002315	8.936	0.0001	16.2
ERROR	30	2816.625000	93.887500			

FACTORIAL/POOLED ERROR AOV For AMAPA Palmer Amaranth Control Notes 10/26/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	3.916667				
R	2	0.166667	0.083333	1.000	0.3798	0.2
A	3	0.250000	0.083333	1.000	0.4064	0.2
B	3	0.250000	0.083333	1.000	0.4064	0.2
AB	9	0.750000	0.083333	1.000	0.4612	0.5
ERROR	30	2.500000	0.083333			

FACTORIAL/POOLED ERROR AOV For IPOSS Mornnglry Species Control Notes 10/26/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	29.250000				
R	2	0.125000	0.062500	0.238	0.7896	0.4
A	3	4.250000	1.416667	5.397	0.0043	0.4
B	3	7.583333	2.527778	9.630	0.0001	0.4
AB	9	9.416667	1.046296	3.986	0.0020	0.9
ERROR	30	7.875000	0.262500			

FACTORIAL/POOLED ERROR AOV For DIGSA Large Crabgrass Control Notes 10/26/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	27.666667				
R	2	0.541667	0.270833	1.489	0.2419	0.3
A	3	5.666667	1.888889	10.382	0.0001	0.4
B	3	6.500000	2.166667	11.908	0.0001	0.4
AB	9	9.500000	1.055556	5.802	0.0001	0.7
ERROR	30	5.458333	0.181944			

FACTORIAL/POOLED ERROR AOV For GLXMA Soybean Yield Bu/A 10/26/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	47	10282.434717				
R	2	337.227302	168.613651	0.988	0.3840	9.4
A	3	108.726230	36.242077	0.212	0.8870	10.9
B	3	3884.031746	1294.677249	7.589	0.0006	10.9
AB	9	834.809511	92.756612	0.544	0.8307	21.8
ERROR	30	5117.639927	170.587998			

Benefits of Residual Herbicides for Burndown

Trial ID: DSB2-11 Cooperator: Delaware Soybean Board
 Location: Field #7 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Mouseear Chickweed	CERVU	Cerastium vulgatum L.
2.	Field Pansy	VIORA	Viola rafinesquii Greene
3.	Cutleaf Evening Primrose	OEOLA	Oenothera laciniata Hill
4.	Henbit	LAMAM	Lamium amplexicaule L.
5.	Redstem Filaree	EROCI	Erodium cicutarium (L.) L'Her. ex Ait.
6.	Horseweed	ERICA	Erigeron canadensis L.

Crop 1: Soybean **GLXMA** **Variety:** H458N
Planting Date: 05/18/11 **Planting Method:** Row- Unit Planter **Depth:** 1 in
Rate: 4 Sd/row-ft **Row Spacing:** 15 in **Seed Bed:** Firm/Trashy
Soil Temperature: 70 F **Soil Moisture:** Moist **Emergence Date:** 05/25/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** FACTORIAL
Tillage Type: No Tillage/Corn Stubble

SOIL DESCRIPTION

% Sand: 78 **% OM:** 1.9 **Texture:** sandy loam
% Silt: 13 **pH:** 5.5
% Clay: 9 **CEC:** 5.7 **Fert. Level:** Medium

Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.2 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	05/05/11
Time of Day:	8:30 am
Application Method:	Spray
Application Timing:	14EPP
Applic. Placement:	Brdcst
Air Temp., Unit:	52 F
% Relative Humidity:	60
Wind Velocity, Unit:	5 mph
Wind Direction:	West
Dew Presence (Y/N):	Y
Soil Temp., Unit:	50 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Wet
% Cloud Cover:	0

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	CERVU
Growth Stage:	seed drop
Height, Unit:	8 in
Density,Unit:	240 m2
Weed 2 Code:	VIORA
Growth Stage:	flower
Height, Unit:	9 in
Density,Unit:	40-160 m2
Weed 3 Code:	OEOLA
Growth Stage:	bolting
Height, Unit:	7 in
Density,Unit:	0-40 m2
Weed 4 Code:	LAMAM
Growth Stage:	seed drop
Height, Unit:	8 in
Density,Unit:	0-30 m2
Weed 5 Code:	EROCI
Growth Stage:	flower
Height, Unit:	12 in
Density,Unit:	0-12 m2
Weed 6 Code:	ERICA
Growth Stage:	bolting
Height, Unit:	2 in
Density,Unit:	0-80 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	26 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

6/5/11 - All glyphosate treatments provided excellent burndown, including glyphosate alone. If crabgrass control was >80% then entered as 0; if crabgrass control was less than 80% then listed as present/poor control and entered as 1. Density ranged from very heavy to sparse through the field (very inconsistent); but where crabgrass was dense, it influenced pigweed emergence and could be skewing pigweed control data.

6/20/11 - The following plots contain few horseweed plants: 103, 210, 302, 312.

Horseweed was heavy in field borders, but few found in the plots. Most treatments provided very good control of horseweed. Grass pressure was variable and where density was higher, influenced pigweed growth.

Benefits of Residual Herbicides for Burndown											
Trial ID: DSB2-11 Cooperator: Delaware Soybean Board											
Location: Field #7 Investigator: Mark VanGessel											
Weed Code						AMASS	VIORA	DIGSS	AMASS	VIORA	DIGSS
Weed or Crop Name						Pigweed	Field	Crabgras	Pigweed	Field	Crabgras
Weed or Crop Name						Species	Pansy	Species	Species	Pansy	Species
Rating Data Type						Control	Control	1=presnt	Control	Control	Control
Rating Unit						%	%	0=absent	%	%	%
Rating Date						06/05/11	06/05/11	06/05/11	06/20/11	06/20/11	06/20/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg						
1	Touchdown Total...k glyphosate	4.17	SL	0.65 lb ae/A	14 EPP	0.0 d		0.7 a	0.0 c	100.0 a	0.0 d
	2,4-D ester	3.8	L	0.475 lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100	D	1.68 % w/v	14 EPP						
	No residual										
2	Touchdown Total...k glyphosate	4.17	SL	0.65 lb ae/A	14 EPP	80.0 c		0.5 a	35.5 b	100.0 a	23.3 cd
	2,4-D ester	3.8	L	0.475 lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100	D	1.68 % w/v	14 EPP						
	Valor XLT Premix	40.3	WG	0.091 lb ai/A	14 EPP						
3	Touchdown Total...k glyphosate	4.17	SL	0.65 lb ae/A	14 EPP	93.3 abc		0.3 a	72.7 a	100.0 a	64.6 ab
	2,4-D ester	3.8	L	0.475 lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100	D	1.68 % w/v	14 EPP						
	Canopy Premix	75	DF	0.164 lb ai/A	14 EPP						
4	Touchdown Total...k glyphosate	4.17	SL	0.65 lb ae/A	14 EPP	91.0 abc		0.3 a	83.3 a	90.0 ab	2.1 d
	2,4-D ester	3.8	L	0.475 lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100	D	1.68 % w/v	14 EPP						
	Canopy EX Premix	29.5	WG	0.0304 lb ai/A	14 EPP						
5	Touchdown Total...k glyphosate	4.17	SL	0.65 lb ae/A	14 EPP	100.0 a		0.7 a	84.3 a	100.0 a	0.0 d
	2,4-D ester	3.8	L	0.475 lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100	D	1.68 % w/v	14 EPP						
	Authority XL Premix	70	DG	0.211 lb ai/A	14 EPP						
6	Touchdown Total...k glyphosate	4.17	SL	0.65 lb ae/A	14 EPP	100.0 a		0.3 a	76.7 a	100.0 a	48.3 abc
	2,4-D ester	3.8	L	0.475 lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100	D	1.68 % w/v	14 EPP						
	---Gangster Co-Pack										
	_Firstrate.....cloransulam	84	WG	0.0262 lb ai/A	14 EPP						
	_Valor SX.....flumioxazin	51	WG	0.08 lb ai/A	14 EPP						
7	Touchdown Total...k glyphosate	4.17	SL	0.65 lb ae/A	14 EPP	93.3 abc		0.3 a	76.0 a	100.0 a	2.2 d
	2,4-D ester	3.8	L	0.475 lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100	D	1.68 % w/v	14 EPP						
	Authority First Premix	70	DF	0.232 lb ai/A	14 EPP						
8	Ignite 280.....glufosinate	2.34	SL	0.402 lb ai/A	14 EPP	0.0 d	0.0 a	0.7 a	0.0 c	1.5 d	0.0 d
	2,4-D ester	3.8	L	0.475 lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100	D	1.68 % w/v	14 EPP						
	No residual										

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						AMASS	VIORA	DIGSS	AMASS	VIORA	DIGSS	
Weed or Crop Name						Pigweed	Field	Crabgras	Pigweed	Field	Crabgras	
Weed or Crop Name						Species	Pansy	Species	Species	Pansy	Species	
Rating Data Type						Control	Control	1=presnt	Control	Control	Control	
Rating Unit						%	%	0=absent	%	%	%	
Rating Date						06/05/11	06/05/11	06/05/11	06/20/11	06/20/11	06/20/11	
Trt	Treatment	Form	Form	Rate	Grow							
No.	Name	Conc	Type	Rate	Unit	Stg						
9	Ignite 280.....glufosinate	2.34	SL	0.402	lb ai/A	14 EPP	100.0 a	50.0 a	0.3 a	77.7 a	69.2 c	72.2 a
	2,4-D ester	3.8L		0.475	lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100D		1.68	% w/v	14 EPP						
	Valor XLT Premix	40.3WG		0.091	lb ai/A	14 EPP						
10	Ignite 280.....glufosinate	2.34	SL	0.402	lb ai/A	14 EPP	100.0 a	43.3 a	0.7 a	75.0 a	66.8 c	17.2 cd
	2,4-D ester	3.8L		0.475	lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100D		1.68	% w/v	14 EPP						
	Canopy Premix	75DF		0.164	lb ai/A	14 EPP						
11	Ignite 280.....glufosinate	2.34	SL	0.402	lb ai/A	14 EPP	86.7 abc	23.3 a	0.7 a	73.0 a	57.0 c	0.0 d
	2,4-D ester	3.8L		0.475	lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100D		1.68	% w/v	14 EPP						
	Canopy EX Premix	29.5WG		0.0304	lb ai/A	14 EPP						
12	Ignite 280.....glufosinate	2.34	SL	0.402	lb ai/A	14 EPP	96.0 ab	20.0 a	1.0 a	83.3 a	70.7 bc	31.7 a-d
	2,4-D ester	3.8L		0.475	lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100D		1.68	% w/v	14 EPP						
	Authority XL Premix	70DG		0.211	lb ai/A	14 EPP						
13	Ignite 280.....glufosinate	2.34	SL	0.402	lb ai/A	14 EPP	95.0 ab	56.7 a	0.7 a	76.7 a	72.1 bc	29.0 bcd
	2,4-D ester	3.8L		0.475	lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100D		1.68	% w/v	14 EPP						
	---Gangster Co-Pack											
	_Firstrate.....cloransulam	84 WG		0.0262	lb ai/A	14 EPP						
	_Valor SX.....flumioxazin	51 WG		0.08	lb ai/A	14 EPP						
14	Ignite 280.....glufosinate	2.34	SL	0.402	lb ai/A	14 EPP	84.9 bc	58.3 a	1.0 a	75.0 a	57.3 c	0.0 d
	2,4-D ester	3.8L		0.475	lb ae/A	14 EPP						
	Dry Ammonium Sulfate	100D		1.68	% w/v	14 EPP						
	Authority First Premix	70DF		0.232	lb ai/A	14 EPP						
LSD (P=.05)							14.79	39.40	0.96	19.44	20.16	40.57
Standard Deviation							8.79	22.15	0.57	11.54	11.51	23.55
CV							10.99	61.6	97.78	18.17	14.86	113.44
Replicate F							2.002	0.184	0.022	0.785	1.216	0.343
Replicate Prob(F)							0.1561	0.8339	0.9782	0.4674	0.3258	0.7146
Treatment F							46.053	2.944	0.496	19.438	17.511	3.488
Treatment Prob(F)							0.0001	0.0527	0.9052	0.0001	0.0001	0.0088

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Benefits of Residual Herbicides for Burndown

Trial ID: DSB2-11 Cooperator: Delaware Soybean Board

Location: Field #7 Investigator: Mark VanGessel

Weed Code	AMASS	VIORA	DIGSS	AMASS	VIORA	DIGSS		
Weed or Crop Name	Pigweed	Field	Crabgras	Pigweed	Field	Crabgras		
Weed or Crop Name	Species	Pansy	Species	Species	Pansy	Species		
Rating Data Type	Control	Control	1=presnt	Control	Control	Control		
Rating Unit	%	%	0=absent	%	%	%		
Rating Date	06/05/11	06/05/11	06/05/11	06/20/11	06/20/11	06/20/11		
Trt Treatment	Form Form	Rate						
No. Name	Conc Type Rate	Unit						
TABLE OF R MEANS								
Replicate 1	76.8	39.3	0.6	65.6	75.0	18.2		
Replicate 2	79.8	36.4	0.6	60.4	76.1	19.1		
Replicate 3	83.4	32.1	0.6	64.5	81.3	25.0		
TABLE OF A MEANS								
1 Touchdown Total	4.17 SL	0.65 lb ae/A	79.7	0.5	61.2	98.6	20.1	
12,4-D ester	3.8 L	0.475 lb ae/A						
1 Ammonium Sulf.	100 D	1.68 % w/v						
2 Ignite 280	2.34 SL	0.402 lb ai/A	80.4	36.0	0.7	65.8	56.4	21.4
22,4-D ester	3.8 L	0.475 lb ae/A						
2 Ammonium Sulf.	100 D	1.68 % w/v						
TABLE OF B MEANS								
1 NO RESIDUAL			0.0	0.0	0.7	0.0	50.7	0.0
2 Valor XLT	40.3 WG	0.091 lb ai/A	90.0	50.0	0.4	56.6	84.6	47.7
3 Canopy	75 DF	0.164 lb ai/A	96.7	43.3	0.5	73.8	83.4	40.9
4 Canopy EX	29.5 WG	0.0304 lb ai/A	88.8	23.3	0.5	78.2	73.5	1.1
5 Authority XL	70 DG	0.211 lb ai/A	98.0	20.0	0.8	83.8	85.3	15.8
6 ---Gangster			97.5	56.7	0.5	76.7	86.1	38.7
6_Firstrate	84 WG	0.0262 lb ai/A						
6_Valor	51 WG	0.08 lb ai/A						
7 Authority First	70 DF	0.232 lb ai/A	89.1	58.3	0.7	75.5	78.6	1.1
TABLE OF AB MEANS								
1 Touchdown Total	4.17 SL	0.65 lb ae/A	0.0	0.7	0.0	100.0	0.0	
12,4-D ester	3.8 L	0.475 lb ae/A						
1 Ammonium Sulf.	100 D	1.68 % w/v						
1 NO RESIDUAL								
2 Ignite 280	2.34 SL	0.402 lb ai/A	0.0	0.0	0.7	0.0	1.5	0.0
22,4-D ester	3.8 L	0.475 lb ae/A						
2 Ammonium Sulf.	100 D	1.68 % w/v						
1 NO RESIDUAL								
1 Touchdown Total	4.17 SL	0.65 lb ae/A	80.0	0.5	35.5	100.0	23.3	
12,4-D ester	3.8 L	0.475 lb ae/A						
1 Ammonium Sulf.	100 D	1.68 % w/v						
2 Valor XLT	40.3 WG	0.091 lb ai/A						
2 Ignite 280	2.34 SL	0.402 lb ai/A	100.0	50.0	0.3	77.7	69.2	72.2
22,4-D ester	3.8 L	0.475 lb ae/A						
2 Ammonium Sulf.	100 D	1.68 % w/v						
2 Valor XLT	40.3 WG	0.091 lb ai/A						

University of Delaware

Weed Code				AMASS	VIORA	DIGSS	AMASS	VIORA	DIGSS		
Weed or Crop Name				Pigweed	Field	Crabgras	Pigweed	Field	Crabgras		
Weed or Crop Name				Species	Pansy	Species	Species	Pansy	Species		
Rating Data Type				Control	Control	1=presnt	Control	Control	Control		
Rating Unit				%	%	0=absent	%	%	%		
Rating Date				06/05/11	06/05/11	06/05/11	06/20/11	06/20/11	06/20/11		
Trt	Treatment	Form	Form	Rate							
No.	Name	Conc	Type	Rate	Unit						
1	Touchdown Total	4.17	SL	0.65	lb ae/A	93.3	.	0.3	72.7	100.0	64.6
	12,4-D ester	3.8	L	0.475	lb ae/A						
1	Ammonium Sulf.	100	D	1.68	% w/v						
3	Canopy	75	DF	0.164	lb ai/A						
2	Ignite 280	2.34	SL	0.402	lb ai/A	100.0	43.3	0.7	75.0	66.8	17.2
	22,4-D ester	3.8	L	0.475	lb ae/A						
2	Ammonium Sulf.	100	D	1.68	% w/v						
3	Canopy	75	DF	0.164	lb ai/A						
1	Touchdown Total	4.17	SL	0.65	lb ae/A	91.0	.	0.3	83.3	90.0	2.1
	12,4-D ester	3.8	L	0.475	lb ae/A						
1	Ammonium Sulf.	100	D	1.68	% w/v						
4	Canopy EX	29.5	WG	0.0304	lb ai/A						
2	Ignite 280	2.34	SL	0.402	lb ai/A	86.7	23.3	0.7	73.0	57.0	0.0
	22,4-D ester	3.8	L	0.475	lb ae/A						
2	Ammonium Sulf.	100	D	1.68	% w/v						
4	Canopy EX	29.5	WG	0.0304	lb ai/A						
1	Touchdown Total	4.17	SL	0.65	lb ae/A	100.0	.	0.7	84.3	100.0	0.0
	12,4-D ester	3.8	L	0.475	lb ae/A						
1	Ammonium Sulf.	100	D	1.68	% w/v						
5	Authority XL	70	DG	0.211	lb ai/A						
2	Ignite 280	2.34	SL	0.402	lb ai/A	96.0	20.0	1.0	83.3	70.7	31.7
	22,4-D ester	3.8	L	0.475	lb ae/A						
2	Ammonium Sulf.	100	D	1.68	% w/v						
5	Authority XL	70	DG	0.211	lb ai/A						
1	Touchdown Total	4.17	SL	0.65	lb ae/A	100.0	.	0.3	76.7	100.0	48.3
	12,4-D ester	3.8	L	0.475	lb ae/A						
1	Ammonium Sulf.	100	D	1.68	% w/v						
6	---Gangster										
6	_Firstrate	84	WG	0.0262	lb ai/A						
6	_Valor	51	WG	0.08	lb ai/A						
2	Ignite 280	2.34	SL	0.402	lb ai/A	95.0	56.7	0.7	76.7	72.1	29.0
	22,4-D ester	3.8	L	0.475	lb ae/A						
2	Ammonium Sulf.	100	D	1.68	% w/v						
6	---Gangster										
6	_Firstrate	84	WG	0.0262	lb ai/A						
6	_Valor	51	WG	0.08	lb ai/A						
1	Touchdown Total	4.17	SL	0.65	lb ae/A	93.3	.	0.3	76.0	100.0	2.2
	12,4-D ester	3.8	L	0.475	lb ae/A						
1	Ammonium Sulf.	100	D	1.68	% w/v						
7	Authority First	70	DF	0.232	lb ai/A						
2	Ignite 280	2.34	SL	0.402	lb ai/A	84.9	58.3	1.0	75.0	57.3	0.0
	22,4-D ester	3.8	L	0.475	lb ae/A						
2	Ammonium Sulf.	100	D	1.68	% w/v						
7	Authority First	70	DF	0.232	lb ai/A						

Benefits of Residual Herbicides for Burndown

Trial ID: DSB2-11 Cooperator: Delaware Soybean Board

Location: Field #7 Investigator: Mark VanGessel

FACTORIAL/POOLED ERROR AOV For AMASS Pigweed Species Control % 06/05/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	41	48520.367504				
R	2	309.569387	154.784693	2.083	0.1449	6.7
A	1	5.166564	5.166564	0.070	0.7941	5.5
B	6	45415.563554	7569.260592	101.839	0.0001	10.2
AB	6	857.589067	142.931511	1.923	0.1148	14.5
ERROR	26	1932.478932	74.326113			

FACTORIAL/POOLED ERROR AOV For VIORA Field Pansy Control % 06/05/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	41	28302.976190				
R	2	90.476190	45.238095	0.197	0.8226	11.8
A	1	13572.023810	13572.023810	59.046	0.0001	9.6
B	6	4332.142857	722.023810	3.141	0.0188	18.0
AB	6	4332.142857	722.023810	3.141	0.0188	25.5
ERROR	26	5976.190476	229.853480			

FACTORIAL/POOLED ERROR AOV For DIGSS Crabgras Species 1=present 0=absent 06/05/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	41	9.936470				
R	2	0.014401	0.007200	0.024	0.9764	0.4
A	1	0.704610	0.704610	2.343	0.1380	0.3
B	6	0.733777	0.122296	0.407	0.8678	0.7
AB	6	0.663435	0.110573	0.368	0.8927	0.9
ERROR	26	7.820247	0.300779			

FACTORIAL/POOLED ERROR AOV For AMASS Pigweed Species Control % 06/20/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	41	37042.011994				
R	2	209.052876	104.526438	0.851	0.4387	8.6
A	1	221.720273	221.720273	1.804	0.1908	7.0
B	6	30795.416307	5132.569384	41.770	0.0001	13.2
AB	6	2621.032833	436.838805	3.555	0.0105	18.6
ERROR	26	3194.789705	122.876527			

FACTORIAL/POOLED ERROR AOV For VIORA Field Pansy Control % 06/20/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	41	32354.378069				
R	2	322.387332	161.193666	2.258	0.1247	6.6
A	1	18700.976424	18700.976424	261.995	0.0001	5.4
B	6	5718.951244	953.158541	13.353	0.0001	10.0
AB	6	5756.204512	959.367419	13.440	0.0001	14.2
ERROR	26	1855.858556	71.379175			

FACTORIAL/POOLED ERROR AOV For DIGSS Crabgras Species Control % 06/20/11

Source	DF	Sum of Squares	Mean Square	F	Prob(F)	LSD (.05)
Total	41	34949.897034				
R	2	380.096387	190.048194	0.524	0.5982	14.8
A	1	19.121620	19.121620	0.053	0.8202	12.1
B	6	16111.998273	2685.333046	7.406	0.0001	22.6
AB	6	9011.753974	1501.958996	4.142	0.0047	32.0
ERROR	26	9426.926780	362.574107			

Residual Control with Burndown Herbicide Rates

Trial ID: DSB3-11 Cooperator: Delaware Soybean Board
 Location: Field #3 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Soybean **GLXMA** **Variety:** H458N
Planting Date: 05/18/11 **Planting Method:** Row- Unit Planter **Depth:** 1 in
Rate: 4 **Sd/row-ft** **Row Spacing:** 15 in **Seed Bed:** Firm/Trashy
Soil Temperature: 70 **F** **Soil Moisture:** Moist **Emergence Date:** 05/25/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: No Tillage/Soybean Stubble

SOIL DESCRIPTION

% Sand: 79 **% OM:** 2.1 **Texture:** sandy loam
% Silt: 10 **pH:** 5.6
% Clay: 11 **CEC:** 7.2 **Fert. Level:** Optimum
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	05/05/11
Time of Day:	10:00 am
Application Method:	Spray
Application Timing:	14EPP
Applic. Placement:	Brdcst
Air Temp., Unit:	56 F
% Relative Humidity:	51
Wind Velocity, Unit:	6 mph
Wind Direction:	West
Dew Presence (Y/N):	N
Soil Temp., Unit:	54 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Wet
Leaf Surf. Moisture:	Moist
% Cloud Cover:	0

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

6/7/11 - Difficult to separate treatments for morningglory control. Morningglory in cotyledon stage. No treatment provided good control across all reps. Due to deer feeding, no injury ratings were possible.

7/5/11 - Ratings for prickly sida are based on written comments and notes:
0 = absent, 1 = present, 2 = heavy/dense

Residual Control with Burndown Herbicide Rates											
Trial ID: DSB3-11 Cooperator: Delaware Soybean Board											
Location: Field #3 Investigator: Mark VanGessel											
Weed Code						AMASS	IPOSS	AMASS	AMBEL	CHEAL	IPOSS
Weed or Crop Name						Pigweed	Morngly	Pigweed	Common	Common	Morngly
Weed or Crop Name						Species	Species	Species	Ragweed	Lambqtrs	Species
Rating Data Type						Control	1=presnt	Control	Control	Control	Control
Rating Unit						%	0=absent	%	%	%	%
Rating Date						06/07/11	06/07/11	07/05/11	07/05/11	07/05/11	07/05/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg						
1	No residual					0.0b	0.67 a	0.0b	0.0b	0.0b	0.0c
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP						
	2,4-D ester	3.8 L		0.475 lb ae/A	14EPP						
	Nonionic Surfactant	100 L		0.25 % v/v	14EPP						
2	Valor XLT Premix	40.3 WG		0.091 lb ai/A	14 EPP	100.0 a	0.83 a	93.3 a	86.7 a	100.0 a	36.7 b
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP						
	2,4-D ester	3.8 L		0.475 lb ae/A	14EPP						
	Nonionic Surfactant	100 L		0.25 % v/v	14EPP						
3	Canopy Premix	75 DF		0.164 lb ai/A	14 EPP	100.0 a	1.00 a	100.0 a	100.0 a	90.0 a	43.3 ab
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP						
	2,4-D ester	3.8 L		0.475 lb ae/A	14EPP						
	Nonionic Surfactant	100 L		0.25 % v/v	14EPP						
4	Canopy EX Premix	29.5 WG		0.0304 lb ai/A	14 EPP	100.0 a	0.33 a	100.0 a	100.0 a	100.0 a	56.7 a
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP						
	2,4-D ester	3.8 L		0.475 lb ae/A	14EPP						
	Nonionic Surfactant	100 L		0.25 % v/v	14EPP						
5	Authority XL Premix	70 DG		0.211 lb ai/A	14 EPP	100.0 a	1.00 a	100.0 a	80.0 a	100.0 a	50.0 ab
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP						
	2,4-D ester	3.8 L		0.475 lb ae/A	14EPP						
	Nonionic Surfactant	100 L		0.25 % v/v	14EPP						
6	---Gangster Co-Pack					100.0 a	1.00 a	100.0 a	70.0 a	100.0 a	43.3 ab
	_Firstate.....cloransulam	84 WG		0.0262 lb ai/A	14 EPP						
	_Valor SX.....flumioxazin	51 WG		0.08 lb ai/A	14 EPP						
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP						
	2,4-D ester	3.8 L		0.475 lb ae/A	14EPP						
	Nonionic Surfactant	100 L		0.25 % v/v	14EPP						
7	Authority First Premix	70 DF		0.232 lb ai/A	14 EPP	100.0 a	0.71 a	100.0 a	86.7 a	100.0 a	60.0 a
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP						
	2,4-D ester	3.8 L		0.475 lb ae/A	14EPP						
	Nonionic Surfactant	100 L		0.25 % v/v	14EPP						
8	OpTill Premix	68 WG		0.085 lb ai/A	14 EPP	100.0 a	0.67 a	100.0 a	83.3 a	100.0 a	56.7 a
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP						
	2,4-D ester	3.8 L		0.475 lb ae/A	14EPP						
	Nonionic Surfactant	100 L		0.25 % v/v	14EPP						
LSD (P=.05)						0.00	0.721	7.15	34.05	10.73	20.00
Standard Deviation						0.00	0.409	4.08	19.44	6.12	11.42
CV						0.0	52.66	4.71	25.64	7.1	26.35
Replicate F						0.000	0.370	1.000	1.995	1.000	1.183
Replicate Prob(F)						1.0000	0.6980	0.3927	0.1728	0.3927	0.3353
Treatment F						0.000	0.967	221.714	8.233	98.143	8.548
Treatment Prob(F)						1.0000	0.4930	0.0001	0.0005	0.0001	0.0004

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						DIGSA	SIDSP
Weed or Crop Name						Large	Prickly
Weed or Crop Name						Crabgras	Sida
Rating Data Type						Control	Notes
Rating Unit						%	0 to 2
Rating Date						07/05/11	07/05/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Stg	
1	No residual						
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP		
	2,4-D ester	3.8L		0.475 lb ae/A	14EPP		
	Nonionic Surfactant	100L		0.25 % v/v	14EPP		
2	Valor XLT Premix	40.3 WG		0.091 lb ai/A	14 EPP	56.7 ab	0.7 a
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP		
	2,4-D ester	3.8L		0.475 lb ae/A	14EPP		
	Nonionic Surfactant	100L		0.25 % v/v	14EPP		
3	Canopy Premix	75 DF		0.164 lb ai/A	14 EPP	43.3 b	1.3 a
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP		
	2,4-D ester	3.8L		0.475 lb ae/A	14EPP		
	Nonionic Surfactant	100L		0.25 % v/v	14EPP		
4	Canopy EX Premix	29.5 WG		0.0304 lb ai/A	14 EPP	53.3 ab	1.3 a
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP		
	2,4-D ester	3.8L		0.475 lb ae/A	14EPP		
	Nonionic Surfactant	100L		0.25 % v/v	14EPP		
5	Authority XL Premix	70 DG		0.211 lb ai/A	14 EPP	66.7 a	1.0 a
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP		
	2,4-D ester	3.8L		0.475 lb ae/A	14EPP		
	Nonionic Surfactant	100L		0.25 % v/v	14EPP		
6	---Gangster Co-Pack					63.3 a	0.3 a
	_Firstrate.....cloransulam	84 WG		0.0262 lb ai/A	14 EPP		
	_Valor SX.....flumioxazin	51 WG		0.08 lb ai/A	14 EPP		
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP		
	2,4-D ester	3.8L		0.475 lb ae/A	14EPP		
	Nonionic Surfactant	100L		0.25 % v/v	14EPP		
7	Authority First Premix	70 DF		0.232 lb ai/A	14 EPP	70.0 a	0.7 a
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP		
	2,4-D ester	3.8L		0.475 lb ae/A	14EPP		
	Nonionic Surfactant	100L		0.25 % v/v	14EPP		
8	OpTill Premix	68 WG		0.085 lb ai/A	14 EPP	60.0 ab	0.7 a
	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	14EPP		
	2,4-D ester	3.8L		0.475 lb ae/A	14EPP		
	Nonionic Surfactant	100L		0.25 % v/v	14EPP		
LSD (P=.05)						17.98	1.81
Standard Deviation						10.26	1.03
CV						19.87	117.54
Replicate F						5.972	0.118
Replicate Prob(F)						0.0133	0.8895
Treatment F						14.373	0.355
Treatment Prob(F)						0.0001	0.9129

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

(Meln1-11)

University of Delaware

Herbicides for Watermelons and Cantalopes
Under Plastic Application
Trial ID: Meln1-11 Cooperator:
Location: Field #1D Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Watermelon CITLA **Variety:** Millionaire
Planting Date: 05/19/11 **Planting Method:** Transplanted- Machine
Rate: 1 pl/3row-ft **Row Spacing:** 72 in

Crop 2: Cantalope CUMMC **Variety:** Athena
Planting Date: 05/19/11 **Planting Method:** Transplanted- Machine
Rate: 1 pl/3row-ft **Row Spacing:** 72 in

SITE AND DESIGN

Plot Width, Unit: 7 FT **Plot Length, Unit:** 75 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Conventional Tillage
Trial Initiation Comments: Beds were formed prior to herbicide application and the plastic was laid immediately after herbicide application.

SOIL DESCRIPTION

% Sand: 83 **% OM:** 0.9 **Texture:** loamy sand
% Silt: 12 **pH:** 5.6
% Clay: 5 **CEC:** 4.5 **Fert. Level:** Medium
Irrigation/Type: Trickle **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.2 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	05/10/11
Time of Day:	11:15 am
Application Method:	Spray
Application Timing:	PreTrans
Applic. Placement:	BroSoi
Air Temp., Unit:	67 F
% Relative Humidity:	40
Wind Velocity, Unit:	3 mph
Wind Direction:	Northeast
Dew Presence (Y/N):	N
Soil Temp., Unit:	65 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	25

APPLICATION EQUIPMENT	
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	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	4 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Herbicides for Watermelons and Cantalopes Under Plastic Application													
Trial ID: Meln1-11 Cooperator:													
Location: Field #1D Investigator: Mark VanGessel													
Weed Code	Crop Code	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date		CITLA Water- melon Injury %	CUMMC Canta- loupe Injury %	CITLA Water- melon Injury %	CUMMC Canta- loupe Injury %	CITLA Water- melon Injury %	CUMMC Canta- loupe Injury %	
							05/26/11	05/26/11	06/02/11	06/02/11	06/10/11	06/10/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Grow Stg	Appl Code						
1	Untreated Check							0.0c	0.0b	0.0e	0.0f	0.0b	0.0d
2	Reflex.....fomesafen	2L		0.375 lb ai/A		PRE-TRP	A	4.0bc	27.7a	26.7ab	60.7b	55.0a	71.7b
3	Dual II.....metolachlor	7.8E		0.487 lb ai/A		PRE-TRP	A	3.3bc	6.7b	14.0cd	17.7d	10.0b	11.3c
4	Dual II.....metolachlor	7.8E		0.73 lb ai/A		PRE-TRP	A	3.3bc	7.3b	13.3cd	18.3d	6.7b	9.7c
5	Dual II.....metolachlor	7.8E		0.975 lb ai/A		PRE-TRP	A	9.3a	11.0b	21.0bc	27.3c	10.0b	12.7c
6	Sandea.....halosulfuron	75DF		0.0234 lb ai/A		PRE-TRP	A	5.0b	7.3b	14.0cd	21.3cd	9.3b	9.0c
7	Sinbar.....terbacil	80W		0.2 lb ai/A		PRE-TRP	A	0.0c	2.7b	35.0a	88.3a	54.3a	100.0a
8	Prefar.....bensulide	4E		6 lb ai/A		PRE-TRP	A	1.0bc	2.0b	7.3de	9.0e	3.3b	2.3d
LSD (P=.05)								4.14	13.29	11.20	7.84	15.73	3.98
Standard Deviation								2.36	7.59	6.40	4.48	8.98	2.27
CV								72.74	93.88	38.96	14.75	48.34	8.39
Replicate F								2.482	0.600	0.847	2.636	2.349	7.662
Replicate Prob(F)								0.1195	0.5624	0.4493	0.1068	0.1319	0.0057
Treatment F								5.125	3.921	8.849	129.531	18.894	808.595
Treatment Prob(F)								0.0046	0.0142	0.0003	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code	Crop Code	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date		MOLVE	POROL	SOLPT	CYPES	ELEIN	ERAME	
							Carpet- weed Count #/ftsq	Common Purslane Count #/ftsq	E.Black Nightshd Count #/ftsq	Yellow Nutsedge Count #/ftsq	Goose- grass Count #/ftsq	Stink- grass Count #/ftsq	
							06/10/11	06/10/11	06/10/11	06/10/11	06/10/11	06/10/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Grow Stg	Appl Code						
1	Untreated Check							7.0abc	0.0a	1.0a	0.7a	19.7a	12.3a
2	Reflex.....fomesafen	2L		0.375 lb ai/A		PRE-TRP	A	1.3cd	0.0a	0.0a	0.3a	4.0a	0.3a
3	Dual II.....metolachlor	7.8E		0.487 lb ai/A		PRE-TRP	A	12.0a	0.0a	0.7a	0.0a	0.0a	1.0a
4	Dual II.....metolachlor	7.8E		0.73 lb ai/A		PRE-TRP	A	4.3bcd	0.7a	0.0a	0.0a	0.0a	0.0a
5	Dual II.....metolachlor	7.8E		0.975 lb ai/A		PRE-TRP	A	3.7bcd	0.0a	0.0a	0.0a	0.0a	0.3a
6	Sandea.....halosulfuron	75DF		0.0234 lb ai/A		PRE-TRP	A	8.3ab	0.0a	2.0a	0.0a	10.0a	5.7a
7	Sinbar.....terbacil	80W		0.2 lb ai/A		PRE-TRP	A	0.7d	0.3a	0.0a	0.0a	2.3a	2.0a
8	Prefar.....bensulide	4E		6 lb ai/A		PRE-TRP	A	7.3ab	0.7a	0.3a	0.0a	0.7a	3.0a
LSD (P=.05)								5.76	1.04	1.35	0.82	14.67	11.52
Standard Deviation								3.29	0.59	0.77	0.47	8.38	6.58
CV								58.9	284.45	154.3	375.44	182.79	213.31
Replicate F								3.356	1.542	0.840	0.568	0.237	2.301
Replicate Prob(F)								0.0645	0.2481	0.4523	0.5794	0.7917	0.1367
Treatment F								4.013	0.797	2.560	0.838	2.080	1.213
Treatment Prob(F)								0.0130	0.6028	0.0637	0.5743	0.1154	0.3580

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						CHEAL	CHEGL	OXAST	EPHMA	PHTAM	MOLVE	
Crop Code						Common	Oakleaf	Yellow	Spotted	Poke-	Carpet-	
Weed or Crop Name						Lambqtrs	Gooseft	Woodsorl	Spurge	weed	weed	
Weed or Crop Name						Count	Count	Count	Count	Count	Count	
Rating Data Type						#/ftsq	#/ftsq	#/ftsq	#/ftsq	#/ftsq	#/ftsq	
Rating Unit						06/10/11	06/10/11	06/10/11	06/10/11	06/10/11	06/28/11	
Rating Date												
Trt Treatment	Form	Form	Rate	Grow	Appl							
No. Name	Conc	Type	Rate	Unit	Stg	Code						
1 Untreated Check							0.7 a	0.3 a	0.0 a	0.0 a	0.3 a	17.0 a
2 Reflex.....fomesafen	2L		0.375 lb ai/A		PRE-TRP	A	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	7.3 a
3 Dual II.....metolachlor	7.8E		0.487 lb ai/A		PRE-TRP	A	0.0 a	0.0 a	1.3 a	0.3 a	0.0 a	15.7 a
4 Dual II.....metolachlor	7.8E		0.73 lb ai/A		PRE-TRP	A	0.0 a	0.0 a	0.3 a	0.0 a	0.0 a	16.0 a
5 Dual II.....metolachlor	7.8E		0.975 lb ai/A		PRE-TRP	A	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	10.7 a
6 Sandea.....halosulfuron	75DF		0.0234 lb ai/A		PRE-TRP	A	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	12.0 a
7 Sinbar.....terbacil	80W		0.2 lb ai/A		PRE-TRP	A	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	5.7 a
8 Prefar.....bensulide	4E		6 lb ai/A		PRE-TRP	A	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	9.3 a
LSD (P=.05)						0.72	0.36	1.42	0.36	0.36		8.45
Standard Deviation						0.41	0.20	0.81	0.20	0.20		4.83
CV						489.9	489.9	390.16	489.9	489.9		41.21
Replicate F						1.000	1.000	1.577	1.000	1.000		4.667
Replicate Prob(F)						0.3927	0.3927	0.2413	0.3927	0.3927		0.0280
Treatment F						1.000	1.000	1.000	1.000	1.000		2.292
Treatment Prob(F)						0.4706	0.4706	0.4706	0.4706	0.4706		0.0884

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code						POROL	SOLPT	CYPES	ELEIN	ERAME	CHEAL	
Crop Code						Common	E.Black	Yellow	Goose-	Stink-	Common	
Weed or Crop Name						Purslane	Nightshd	Nutsedge	grass	grass	Lambqtrs	
Weed or Crop Name						Count	Count	Count	Count	Count	Count	
Rating Data Type						#/ftsq	#/ftsq	#/ftsq	#/ftsq	#/ftsq	#/ftsq	
Rating Unit						06/28/11	06/28/11	06/28/11	06/28/11	06/28/11	06/28/11	
Rating Date												
Trt Treatment	Form	Form	Rate	Grow	Appl							
No. Name	Conc	Type	Rate	Unit	Stg	Code						
1 Untreated Check							1.0 a	0.0 a	0.3 a	15.0 a	46.7 a	0.3 a
2 Reflex.....fomesafen	2L		0.375 lb ai/A		PRE-TRP	A	0.3 a	0.7 a	0.0 a	11.7 a	22.3 a	0.0 a
3 Dual II.....metolachlor	7.8E		0.487 lb ai/A		PRE-TRP	A	0.0 a	0.3 a	0.0 a	1.3 a	19.3 a	0.0 a
4 Dual II.....metolachlor	7.8E		0.73 lb ai/A		PRE-TRP	A	0.0 a	0.0 a	0.0 a	1.0 a	3.0 a	0.0 a
5 Dual II.....metolachlor	7.8E		0.975 lb ai/A		PRE-TRP	A	0.0 a	0.0 a	0.7 a	0.3 a	2.3 a	0.0 a
6 Sandea.....halosulfuron	75DF		0.0234 lb ai/A		PRE-TRP	A	0.0 a	0.0 a	0.0 a	10.0 a	40.7 a	0.0 a
7 Sinbar.....terbacil	80W		0.2 lb ai/A		PRE-TRP	A	0.3 a	0.0 a	0.0 a	13.3 a	28.3 a	0.0 a
8 Prefar.....bensulide	4E		6 lb ai/A		PRE-TRP	A	0.0 a	0.0 a	0.0 a	5.0 a	28.3 a	0.0 a
LSD (P=.05)						0.70	0.82	0.82	15.84	40.26		0.36
Standard Deviation						0.40	0.47	0.47	9.04	22.99		0.20
CV						192.43	375.44	375.44	125.46	96.27		489.9
Replicate F						3.370	0.568	0.568	2.406	11.815		1.000
Replicate Prob(F)						0.0638	0.5794	0.5794	0.1264	0.0010		0.3927
Treatment F						2.333	0.838	0.838	1.316	1.431		1.000
Treatment Prob(F)						0.0840	0.5743	0.5743	0.3127	0.2686		0.4706

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						CHEGL	AMASS	OXAST	ERICA	EPHMA	PHTAM	
Crop Code						Oakleaf	Pigweed	Yellow	Horse-	Spotted	Poke-	
Weed or Crop Name						Gooseft	Species	Woodsorl	weed	Spurge	weed	
Weed or Crop Name						Count	Count	Count	Count	Count	Count	
Rating Data Type						#/ftsq	#/ftsq	#/ftsq	#/ftsq	#/ftsq	#/ftsq	
Rating Unit						06/28/11	06/28/11	06/28/11	06/28/11	06/28/11	06/28/11	
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code						
1	Untreated Check						0.7 a	0.7 a	0.0 a	0.3 a	0.0 a	0.0 a
2	Reflex.....fomesafen	2L		0.375 lb ai/A	PRE-TRP	A	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a
3	Dual II.....metolachlor	7.8E		0.487 lb ai/A	PRE-TRP	A	0.0 a	0.0 a	0.0 a	0.3 a	0.0 a	0.0 a
4	Dual II.....metolachlor	7.8E		0.73 lb ai/A	PRE-TRP	A	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a
5	Dual II.....metolachlor	7.8E		0.975 lb ai/A	PRE-TRP	A	0.0 a	0.0 a	0.7 a	0.0 a	0.0 a	0.0 a
6	Sandea.....halosulfuron	75DF		0.0234 lb ai/A	PRE-TRP	A	0.7 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a
7	Sinbar.....terbacil	80W		0.2 lb ai/A	PRE-TRP	A	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a	0.0 a
8	Prefar.....bensulide	4E		6 lb ai/A	PRE-TRP	A	0.7 a	0.0 a	0.3 a	0.0 a	0.0 a	0.0 a
LSD (P=.05)							0.96	0.72	0.75	0.47	0.00	0.00
Standard Deviation							0.55	0.41	0.43	0.27	0.00	0.00
CV							220.39	489.9	343.65	320.71	0.0	0.0
Replicate F							2.882	1.000	2.032	2.333	0.000	0.000
Replicate Prob(F)							0.0895	0.3927	0.1679	0.1335	1.0000	1.0000
Treatment F							1.176	1.000	1.000	1.000	0.000	0.000
Treatment Prob(F)							0.3753	0.4706	0.4706	0.4706	1.0000	1.0000

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code						SETFA	DIGSA			MOLVE	POROL	
Crop Code						Giant	Large	CITLA	CUMMC	Carpet-	Common	
Weed or Crop Name						Foxtail	Crabgras	Water-	Canta-	weed	Purslane	
Weed or Crop Name						Count	Count	melon	loupe	Count	Count	
Rating Data Type						#/ftsq	#/ftsq	Injury	Injury	Count	Count	
Rating Unit						#/ftsq	#/ftsq	%	%	#/ftsq	#/ftsq	
Rating Date						06/28/11	06/28/11	07/14/11	07/14/11	07/18/11	07/18/11	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code						
1	Untreated Check						0.0 a	0.0 a	23.3 a	0.0 a	1.0 a	0.0 a
2	Reflex.....fomesafen	2L		0.375 lb ai/A	PRE-TRP	A	0.0 a	0.0 a	50.0 a	6.0 a	4.3 a	0.0 a
3	Dual II.....metolachlor	7.8E		0.487 lb ai/A	PRE-TRP	A	0.0 a	0.0 a	2.3 a	0.0 a	1.3 a	0.0 a
4	Dual II.....metolachlor	7.8E		0.73 lb ai/A	PRE-TRP	A	0.0 a	0.0 a	2.3 a	2.3 a	1.7 a	0.0 a
5	Dual II.....metolachlor	7.8E		0.975 lb ai/A	PRE-TRP	A	0.0 a	0.0 a	9.7 a	2.3 a	0.7 a	0.0 a
6	Sandea.....halosulfuron	75DF		0.0234 lb ai/A	PRE-TRP	A	0.0 a	0.0 a	2.3 a	0.0 a	2.3 a	0.0 a
7	Sinbar.....terbacil	80W		0.2 lb ai/A	PRE-TRP	A	0.0 a	0.0 a	66.7 a	7.3 a	6.3 a	0.3 a
8	Prefar.....bensulide	4E		6 lb ai/A	PRE-TRP	A	0.0 a	0.0 a	33.3 a	0.0 a	1.3 a	0.0 a
LSD (P=.05)							0.00	0.00	67.08	8.43	5.16	0.36
Standard Deviation							0.00	0.00	38.30	4.81	2.95	0.20
CV							0.0	0.0	161.27	213.89	124.12	489.9
Replicate F							0.000	0.000	0.001	1.506	6.271	1.000
Replicate Prob(F)							1.0000	1.0000	0.9994	0.2557	0.0114	0.3927
Treatment F							0.000	0.000	1.226	1.113	1.331	1.000
Treatment Prob(F)							1.0000	1.0000	0.3517	0.4073	0.3066	0.4706

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						SOLPT	CYPES	ELEIN	ERAME	CHEAL	CHEGL	
Crop Code						E.Black	Yellow	Goose-	Stink-	Common	Oakleaf	
Weed or Crop Name						Nightshd	Nutsedge	grass	grass	Lambqtrs	Gooseft	
Weed or Crop Name						Count	Count	Count	Count	Count	Count	
Rating Data Type						#/ftsq	#/ftsq	#/ftsq	#/ftsq	#/ftsq	#/ftsq	
Rating Unit						07/18/11	07/18/11	07/18/11	07/18/11	07/18/11	07/18/11	
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code						
1	Untreated Check						0.0 a	0.0 a	0.0 a	19.0 a	0.3 a	0.3 a
2	Reflex.....fomesafen	2L		0.375 lb ai/A	PRE-TRP A		0.0 a	0.0 a	0.3 a	7.3 a	0.0 a	0.0 a
3	Dual II.....metolachlor	7.8E		0.487 lb ai/A	PRE-TRP A		0.3 a	0.0 a	0.0 a	3.7 a	0.0 a	0.0 a
4	Dual II.....metolachlor	7.8E		0.73 lb ai/A	PRE-TRP A		0.0 a	0.0 a	0.3 a	3.0 a	0.0 a	0.0 a
5	Dual II.....metolachlor	7.8E		0.975 lb ai/A	PRE-TRP A		0.0 a	0.7 a	0.0 a	2.3 a	0.0 a	0.0 a
6	Sandea.....halosulfuron	75DF		0.0234 lb ai/A	PRE-TRP A		0.3 a	0.0 a	0.0 a	7.7 a	0.0 a	1.0 a
7	Sinbar.....terbacil	80W		0.2 lb ai/A	PRE-TRP A		0.0 a	0.0 a	0.0 a	11.3 a	0.0 a	0.0 a
8	Prefar.....bensulide	4E		6 lb ai/A	PRE-TRP A		0.0 a	0.7 a	0.0 a	10.7 a	0.0 a	0.3 a
LSD (P=.05)						0.52	0.78	0.47	15.40	0.36	1.22	
Standard Deviation						0.30	0.44	0.27	8.79	0.20	0.69	
CV						358.57	265.92	320.71	108.19	489.9	333.3	
Replicate F						0.467	1.485	2.333	12.426	1.000	0.605	
Replicate Prob(F)						0.6365	0.2601	0.1335	0.0008	0.3927	0.5598	
Treatment F						0.800	1.455	1.000	1.196	1.000	0.778	
Treatment Prob(F)						0.6004	0.2604	0.4706	0.3661	0.4706	0.6161	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code						OXAST	ERICA	EPHMA	SETFA	DIGSA	CUMMC	
Crop Code						Yellow	Horse-	Spotted	Giant	Large	Canta-	
Weed or Crop Name						Woodsrl	weed	Spurge	Foxtail	Crabgras	loupe	
Weed or Crop Name						Count	Count	Count	Count	Count	Yield-H1	
Rating Data Type						#/ftsq	#/ftsq	#/ftsq	#/ftsq	#/ftsq	lbs/plot	
Rating Unit						07/18/11	07/18/11	07/18/11	07/18/11	07/18/11	07/06/11	
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code						
1	Untreated Check						0.0 a	0.0 a	0.0 a	4.7 a	0.0 a	8.7 a
2	Reflex.....fomesafen	2L		0.375 lb ai/A	PRE-TRP A		0.0 a	0.0 a	0.0 a	1.7 b	0.0 a	0.0 b
3	Dual II.....metolachlor	7.8E		0.487 lb ai/A	PRE-TRP A		0.0 a	0.3 a	0.0 a	0.7 b	0.0 a	3.2 b
4	Dual II.....metolachlor	7.8E		0.73 lb ai/A	PRE-TRP A		0.3 a	0.0 a	0.3 a	1.0 b	0.0 a	2.5 b
5	Dual II.....metolachlor	7.8E		0.975 lb ai/A	PRE-TRP A		0.7 a	0.0 a	0.0 a	0.0 b	0.0 a	0.0 b
6	Sandea.....halosulfuron	75DF		0.0234 lb ai/A	PRE-TRP A		0.7 a	0.0 a	0.0 a	0.3 b	0.0 a	0.0 b
7	Sinbar.....terbacil	80W		0.2 lb ai/A	PRE-TRP A		0.0 a	0.0 a	0.0 a	0.0 b	0.3 a	0.0 b
8	Prefar.....bensulide	4E		6 lb ai/A	PRE-TRP A		0.0 a	0.0 a	0.0 a	0.7 b	0.0 a	3.2 b
LSD (P=.05)						0.93	0.36	0.36	2.65	0.36	5.22	
Standard Deviation						0.53	0.20	0.20	1.51	0.20	2.98	
CV						253.88	489.9	489.9	134.56	489.9	135.51	
Replicate F						3.723	1.000	1.000	0.709	1.000	3.559	
Replicate Prob(F)						0.0505	0.3927	0.3927	0.5089	0.3927	0.0563	
Treatment F						1.000	1.000	1.000	3.073	1.000	3.068	
Treatment Prob(F)						0.4706	0.4706	0.4706	0.0351	0.4706	0.0353	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	
Crop Code							Canta-	Canta-	Canta-	Canta-	Canta-	
Weed or Crop Name							loupe	loupe	loupe	loupe	loupe	
Weed or Crop Name							Yield-H1	Yield-H2	Yield-H2	Yield-H3	Yield-H3	
Rating Data Type							#/plot	lbs/plot	#/plot	lbs/plot	#/plot	
Rating Unit							07/06/11	07/08/11	07/08/11	07/11/11	07/11/11	
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Grow Stg	Appl Code					
1	Untreated Check							2.0 a	15.3 a	3.3 a	8.9 ab	1.7 ab
2	Reflex.....fomesafen	2L		0.375 lb ai/A		PRE-TRP A		0.0 b	0.0 b	0.0 a	0.0 c	0.0 c
3	Dual II.....metolachlor	7.8E		0.487 lb ai/A		PRE-TRP A		1.0 ab	11.6 a	3.0 a	11.1 ab	2.3 ab
4	Dual II.....metolachlor	7.8E		0.73 lb ai/A		PRE-TRP A		0.7 b	13.1 a	2.7 a	5.6 bc	1.3 bc
5	Dual II.....metolachlor	7.8E		0.975 lb ai/A		PRE-TRP A		0.0 b	9.1 ab	2.0 a	10.9 ab	2.3 ab
6	Sandea.....halosulfuron	75DF		0.0234 lb ai/A		PRE-TRP A		0.0 b	7.0 ab	1.7 a	9.5 ab	2.0 ab
7	Sinbar.....terbacil	80W		0.2 lb ai/A		PRE-TRP A		0.0 b	0.0 b	0.0 a	0.0 c	0.0 c
8	Prefar.....bensulide	4E		6 lb ai/A		PRE-TRP A		0.7 b	13.8 a	3.0 a	15.8 a	3.0 a
LSD (P=.05)								1.26	10.39	2.51	7.05	1.35
Standard Deviation								0.72	5.93	1.43	4.03	0.77
CV								132.85	67.91	73.07	52.07	48.73
Replicate F								3.943	0.592	0.326	1.644	1.960
Replicate Prob(F)								0.0438	0.5667	0.7274	0.2284	0.1776
Treatment F								2.931	3.059	2.578	5.695	6.040
Treatment Prob(F)								0.0412	0.0356	0.0623	0.0029	0.0022

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	
Crop Code							Canta-	Canta-	Canta-	Canta-	Canta-	Canta-	
Weed or Crop Name							loupe	loupe	loupe	loupe	loupe	loupe	
Weed or Crop Name							Yield-H4	Yield-H4	Yield-H5	Yield-H5	Yld-Ttl	Yld-Ttl	
Rating Data Type							lbs/plot	#/plot	lbs/plot	#/plot	lbs/plot	#/plot	
Rating Unit							07/14/11	07/14/11	07/18/11	07/18/11			
Rating Date													
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Grow Stg	Appl Code						
1	Untreated Check							13.8 a	2.3 a	54.7 a	10.3 a	101 a	20 a
2	Reflex.....fomesafen	2L		0.375 lb ai/A		PRE-TRP A		0.0 a	0.0 a	0.0 b	0.0 b	0 b	0 b
3	Dual II.....metolachlor	7.8E		0.487 lb ai/A		PRE-TRP A		8.4 a	1.7 a	47.4 a	8.7 a	82 a	17 a
4	Dual II.....metolachlor	7.8E		0.73 lb ai/A		PRE-TRP A		12.7 a	2.3 a	53.4 a	11.7 a	87 a	19 a
5	Dual II.....metolachlor	7.8E		0.975 lb ai/A		PRE-TRP A		12.2 a	2.3 a	44.0 a	9.3 a	76 a	16 a
6	Sandea.....halosulfuron	75DF		0.0234 lb ai/A		PRE-TRP A		4.0 a	0.7 a	48.3 a	9.7 a	69 a	14 a
7	Sinbar.....terbacil	80W		0.2 lb ai/A		PRE-TRP A		0.0 a	0.0 a	0.0 b	0.0 b	0 b	0 b
8	Prefar.....bensulide	4E		6 lb ai/A		PRE-TRP A		10.6 a	2.0 a	42.0 a	8.0 a	85 a	17 a
LSD (P=.05)								16.94	3.04	34.30	7.67	34.5	7.6
Standard Deviation								9.6748	1.74	19.5871	4.38	19.7	4.4
CV								125.68	122.63	54.06	60.73	31.51	34.32
Replicate F								0.131	0.179	1.156	0.655	0.747	0.324
Replicate Prob(F)								0.8783	0.8376	0.3431	0.5349	0.4918	0.7284
Treatment F								1.022	1.065	4.051	3.285	12.181	10.155
Treatment Prob(F)								0.4579	0.4333	0.0125	0.0277	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Weed Code						CITLA	CITLA	CITLA	CITLA	CITLA	CITLA	
Crop Code						Water-	Water-	Water-	Water-	Water-	Water-	
Weed or Crop Name						melon	melon	melon	melon	melon	melon	
Weed or Crop Name						Yield-H1	Yield-H1	Yield-H2	Yield-H2	Yld-Ttl	Yld-Ttl	
Rating Data Type						lbs/plot	#/plot	lbs/plot	#/plot	lbs/plot	#/plot	
Rating Unit						07/20/11	07/20/11	08/04/11	08/04/11			
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code						
1	Untreated Check						131.5 a	9.3 a	144.8 a	9.0 a	276 a	18 a
2	Reflex.....fomesafen	2L		0.375 lb ai/A	PRE-TRP	A	53.3 a	4.3 a	195.0 a	12.0 a	248 a	16 a
3	Dual II.....metolachlor	7.8E		0.487 lb ai/A	PRE-TRP	A	110.5 a	7.3 a	137.9 a	8.7 a	248 a	16 a
4	Dual II.....metolachlor	7.8E		0.73 lb ai/A	PRE-TRP	A	130.4 a	8.0 a	149.5 a	8.0 a	280 a	16 a
5	Dual II.....metolachlor	7.8E		0.975 lb ai/A	PRE-TRP	A	102.1 a	8.0 a	120.2 a	6.7 a	222 a	15 a
6	Sandea.....halosulfuron	75DF		0.0234 lb ai/A	PRE-TRP	A	129.2 a	8.3 a	148.2 a	8.7 a	277 a	17 a
7	Sinbar.....terbacil	80W		0.2 lb ai/A	PRE-TRP	A	47.6 a	3.3 a	129.0 a	10.3 a	177 a	14 a
8	Prefar.....bensulide	4E		6 lb ai/A	PRE-TRP	A	125.5 a	8.3 a	200.2 a	10.7 a	326 a	19 a
LSD (P=.05)							76.63	4.45	97.14	5.59	84.8	4.2
Standard Deviation							43.76	2.54	55.47	3.19	48.4	2.4
CV							42.17	35.63	36.23	34.5	18.84	14.68
Replicate F							2.084	2.152	0.502	0.528	0.353	1.709
Replicate Prob(F)							0.1614	0.1531	0.6156	0.6012	0.7089	0.2168
Treatment F							1.869	2.097	0.833	0.830	2.535	1.606
Treatment Prob(F)							0.1513	0.1129	0.5778	0.5797	0.0657	0.2134

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Chateau for Watermelons and Cantalopes

Trial ID: MELN2-11 Cooperator:
 Location: Field #22 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Large Crabgrass	DIGSA	Digitaria sanguinalis (L.) Scop.
2.	Pigweed Species	AMASS	Amaranthus sp.
3.	Morningglory Species	IPOSS	Ipomoea sp.
4.	Yellow Nutsedge	CYPES	Cyperus esculentus L.
5.	Horsenettle	SOLCA	Solanum carolinense L.

Crop 1: Watermelon **CITLA** **Variety:** Millionaire
Planting Date: 05/24/11 **Planting Method:** Transplanted- Machine
Rate: 1 3 ft-row **Row Spacing:** 8 ft **Seed Bed:** plasticulture

SITE AND DESIGN

Plot Width, Unit: 8 FT **Plot Length, Unit:** 35 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

SOIL DESCRIPTION

% Sand: 80 **% OM:** 0.8 **Texture:** sandy loam
% Silt: 10 **pH:** 6.3
% Clay: 10 **CEC:** 4.9 **Fert. Level:** Medium

Irrigation/Type: Trickle **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	06/07/11
Time of Day:	11:00 am
Application Method:	Spray
Application Timing:	Directed
Applic. Placement:	BroDir
Air Temp., Unit:	80 F
% Relative Humidity:	50
Wind Velocity, Unit:	3 mph
Wind Direction:	West
Dew Presence (Y/N):	N
Soil Temp., Unit:	79 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Dry
Leaf Surf. Moisture:	Dry
% Cloud Cover:	40

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code:	CITLA
Growth Stage:	vining
Height, Unit:	18 in
Crop Health:	Good

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	DIGSA
Growth Stage:	1-3 tiller
Height, Unit:	3.5 in
Density,Unit:	20-80 m2
Weed 2 Code:	AMASS
Growth Stage:	vegetative
Height, Unit:	3.5 in
Density,Unit:	0-40 m2
Weed 3 Code:	IPOSS
Growth Stage:	vegetative
Height, Unit:	2 in
Density,Unit:	0-4 m2
Weed 4 Code:	CYPES
Growth Stage:	vegetative
Height, Unit:	4 in
Density,Unit:	0-8 m2
Weed 5 Code:	SOLCA
Growth Stage:	vegetative
Height, Unit:	4 in
Density,Unit:	0-16 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	25 psi
Nozzle Type:	XRTEEJET
Nozzle Size:	95015E
Nozzle Spacing, Unit:	8 in
Band Width, Unit:	32 in
Boom Length, Unit:	6 nozl
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	19.6 gpa
Propellant:	Comp. Air

Trial Comments

6-17-11 Yellow Nutsedge rating: 1= present. 0.5 = present but injured. 0.0 = not present.
 7-05-11 Foxes may be eating some melons?

Chateau for Watermelons and Cantalopes							CITLA	AMASS	SOLCA	DIGSS	CYPES
Trial ID: MELN2-11 Cooperator:							Water- melon Injury %	Pigweed Species Control %	Horse- nettle Control %	Large Crabgrass Control %	Yellow Nutsedge Control %
Location: Field #22 Investigator: Mark VanGessel											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Untreated Check						0.0 c	0.0 c	0.0 d	0.0 e	0.0 c
2	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	2.7 bc	98.3 b	75.0 bc	82.7 a-d	95.0 a
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A					
3	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	12.7 a	100.0 a	95.0 a	90.0 ab	97.5 a
	Chateau.....flumioxazin	51 WG		0.096 lb ai/A	Directed	A					
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed	A					
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A					
4	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	11.7 a	100.0 a	93.0 a	87.3 abc	95.0 a
	Chateau.....flumioxazin	51 WG		0.064 lb ai/A	Directed	A					
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed	A					
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A					
5	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	1.7 c	100.0 a	80.0 abc	76.7 d	92.5 ab
	Reflex.....fomesafen	2 L		0.375 lb ai/A	Directed	A					
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed	A					
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A					
6	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	0.0 c	100.0 a	79.3 abc	80.0 bcd	97.5 a
	Reflex.....fomesafen	2 L		0.25 lb ai/A	Directed	A					
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed	A					
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A					
7	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	0.0 c	100.0 a	70.0 c	78.0 cd	95.0 a
	Strategy Premix	2.1 E		0.394 lb ai/A	Directed	A					
	Curbit.....ethalfluralin	3 E		0.187 lb ai/A	Directed	A					
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A					
8	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	3.3 bc	100.0 a	81.0 abc	77.3 cd	96.0 a
	Strategy Premix	2.1 E		0.394 lb ai/A	Directed	A					
	Curbit.....ethalfluralin	3 E		0.187 lb ai/A	Directed	A					
	Sandea.....halosulfuron	75 DF		0.0313 lb ai/A	Directed	A					
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A					
9	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	10.0 ab	100.0 a	91.7 ab	91.7 a	93.5 ab
	Fierce Premix	76 WG		0.142 lb ai/A	Directed	A					
	---flumioxazin										
	---V-10206										
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A					
10	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	0.0 c	100.0 a	86.0 abc	80.7 bcd	85.0 b
	Sinbar.....terbacil	80 W		0.0335 lb ai/A	Directed	A					
	Sandea.....halosulfuron	75 DF		0.0313 lb ai/A	Directed	A					
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A					
LSD (P=.05)							7.62	1.57	17.01	10.33	9.42
Standard Deviation							4.44	0.91	9.92	6.02	4.17
CV							105.76	1.02	13.21	8.09	4.92
Replicate F							0.157	1.000	6.165	8.059	12.549
Replicate Prob(F)							0.8558	0.3874	0.0091	0.0032	0.0063
Treatment F							4.074	3587.667	23.222	58.883	103.535
Treatment Prob(F)							0.0054	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							CITLA	AMASS	SOLCA	DIGSS	CYPES
Crop Code							Water-	Pigweed	Horse-	Large	Yellow
Weed or Crop Name							melon	Species	nettle	Crabgrass	Nutsedge
Weed or Crop Name							Injury	Control	Control	Control	Presence
Rating Data Type							%	%	%	%	0-1
Rating Unit							06/17/11	06/17/11	06/17/11	06/17/11	06/17/11
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Untreated Check						0.0e	0.0c	0.0e	0.0d	0.33 a
2	Gramoxone Inteon..paraquat Nonionic Surfactant	2 SL 100 L		0.5 lb ai/A 0.25 % v/v	Directed Directed	A A	0.0e	100.0 a	57.7 cd	76.3 bc	0.50 a
3	Gramoxone Inteon..paraquat Chateau.....flumioxazin Curbit.....ethalfluralin Nonionic Surfactant	2 SL 51 WG 3 E 100 L		0.5 lb ai/A 0.096 lb ai/A 0.47 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	10.7 bc	100.0 a	86.7 ab	89.3 ab	0.33 a
4	Gramoxone Inteon..paraquat Chateau.....flumioxazin Curbit.....ethalfluralin Nonionic Surfactant	2 SL 51 WG 3 E 100 L		0.5 lb ai/A 0.064 lb ai/A 0.47 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	14.3 ab	100.0 a	90.0 a	85.3 abc	0.33 a
5	Gramoxone Inteon..paraquat Reflex.....fomesafen Curbit.....ethalfluralin Nonionic Surfactant	2 SL 2 L 3 E 100 L		0.5 lb ai/A 0.375 lb ai/A 0.47 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	11.0 abc	100.0 a	80.0 ab	77.3 bc	0.33 a
6	Gramoxone Inteon..paraquat Reflex.....fomesafen Curbit.....ethalfluralin Nonionic Surfactant	2 SL 2 L 3 E 100 L		0.5 lb ai/A 0.25 lb ai/A 0.47 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	5.3 cde	95.0 b	70.0 bc	79.0 abc	0.33 a
7	Gramoxone Inteon..paraquat Strategy Premix Curbit.....ethalfluralin Nonionic Surfactant	2 SL 2.1 E 3 E 100 L		0.5 lb ai/A 0.394 lb ai/A 0.187 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	0.0e	100.0 a	51.7 d	75.3 c	0.33 a
8	Gramoxone Inteon..paraquat Strategy Premix Curbit.....ethalfluralin Sanda.....halosulfuron Nonionic Surfactant	2 SL 2.1 E 3 E 75 DF 100 L		0.5 lb ai/A 0.394 lb ai/A 0.187 lb ai/A 0.0313 lb ai/A 0.25 % v/v	Directed Directed Directed Directed Directed	A A A A A	8.3 bcd	100.0 a	71.7 bc	75.0 c	0.17 a
9	Gramoxone Inteon..paraquat Fierce Premix ---flumioxazin ---V-10206 Nonionic Surfactant	2 SL 76 WG 100 L		0.5 lb ai/A 0.142 lb ai/A 0.25 % v/v	Directed Directed Directed	A A A	18.0 a	100.0 a	86.0 ab	91.0 a	0.33 a
10	Gramoxone Inteon..paraquat Sinbar.....terbacil Sanda.....halosulfuron Nonionic Surfactant	2 SL 80 W 75 DF 100 L		0.5 lb ai/A 0.0335 lb ai/A 0.0313 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	2.3 de	100.0 a	79.7 ab	78.7 abc	0.33 a
LSD (P=.05)							7.06	2.71	16.84	13.26	0.440
Standard Deviation							4.12	1.58	9.82	7.73	0.256
CV							58.82	1.77	14.58	10.63	76.92
Replicate F							0.478	1.000	13.563	2.531	10.014
Replicate Prob(F)							0.6278	0.3874	0.0003	0.1075	0.0012
Treatment F							7.424	1189.667	22.297	34.468	0.282
Treatment Prob(F)							0.0002	0.0001	0.0001	0.0001	0.9714

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code							IPOSS	CITLA	AMASS	SOLCA	DIGSS
Crop Code							Morngrly	Water-	Pigweed	Horse-	Large
Weed or Crop Name							Species	melon	Species	nettle	Crabgras
Weed or Crop Name							Control	Injury	Control	Control	Control
Rating Data Type							%	%	%	%	%
Rating Unit							06/17/11	07/05/11	07/05/11	07/05/11	07/05/11
Rating Date											
Trt	Treatment	Form	Form	Rate	Grow	Appl					
No.	Name	Conc	Type	Rate	Stg	Code					
1	Untreated Check						0.0d	10.0a	0.0b	0.0d	0.0e
2	Gramoxone Inteon..paraquat Nonionic Surfactant	2 SL 100 L		0.5 lb ai/A 0.25 % v/v	Directed Directed	A A	76.7c	10.0a	98.3a	35.0c	59.0d
3	Gramoxone Inteon..paraquat Chateau.....flumioxazin Curbit.....ethalfluralin Nonionic Surfactant	2 SL 51 WG 3 E 100 L		0.5 lb ai/A 0.096 lb ai/A 0.47 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	84.0a	10.0a	100.0a	90.7a	93.3a
4	Gramoxone Inteon..paraquat Chateau.....flumioxazin Curbit.....ethalfluralin Nonionic Surfactant	2 SL 51 WG 3 E 100 L		0.5 lb ai/A 0.064 lb ai/A 0.47 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	80.0abc	10.0a	100.0a	76.7ab	87.7ab
5	Gramoxone Inteon..paraquat Reflex.....fomesafen Curbit.....ethalfluralin Nonionic Surfactant	2 SL 2 L 3 E 100 L		0.5 lb ai/A 0.375 lb ai/A 0.47 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	82.0ab	13.3a	100.0a	70.0ab	75.0bc
6	Gramoxone Inteon..paraquat Reflex.....fomesafen Curbit.....ethalfluralin Nonionic Surfactant	2 SL 2 L 3 E 100 L		0.5 lb ai/A 0.25 lb ai/A 0.47 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	80.0abc	10.7a	100.0a	55.0bc	79.0abc
7	Gramoxone Inteon..paraquat Strategy Premix Curbit.....ethalfluralin Nonionic Surfactant	2 SL 2.1 E 3 E 100 L		0.5 lb ai/A 0.394 lb ai/A 0.187 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	78.3bc	10.0a	100.0a	50.0bc	69.3cd
8	Gramoxone Inteon..paraquat Strategy Premix Curbit.....ethalfluralin Sanda.....halosulfuron Nonionic Surfactant	2 SL 2.1 E 3 E 75 DF 100 L		0.5 lb ai/A 0.394 lb ai/A 0.187 lb ai/A 0.0313 lb ai/A 0.25 % v/v	Directed Directed Directed Directed Directed	A A A A A	80.0abc	13.3a	96.7a	61.7abc	76.7bc
9	Gramoxone Inteon..paraquat Fierce Premix ---flumioxazin ---V-10206 Nonionic Surfactant	2 SL 76 WG 100 L		0.5 lb ai/A 0.142 lb ai/A 0.25 % v/v	Directed Directed Directed	A A A	81.3abc	13.3a	100.0a	71.0ab	87.3ab
10	Gramoxone Inteon..paraquat Sinbar.....terbacil Sanda.....halosulfuron Nonionic Surfactant	2 SL 80 W 75 DF 100 L		0.5 lb ai/A 0.0335 lb ai/A 0.0313 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	80.7abc	10.0a	96.7a	83.3ab	79.3abc
LSD (P=.05)							4.69	3.75	4.76	34.04	14.50
Standard Deviation							2.73	2.18	2.77	19.84	8.45
CV							3.78	19.73	3.11	33.44	11.96
Replicate F							1.218	0.301	0.759	12.651	5.800
Replicate Prob(F)							0.3190	0.7439	0.4825	0.0004	0.0114
Treatment F							260.728	1.566	383.916	5.361	29.897
Treatment Prob(F)							0.0001	0.1995	0.0001	0.0012	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						AMASS	DIGSA	IPOSS	AMBEL	CITLA	CITLA	
Crop Code						Pigweed	Large	Morngrly	Common	Water-	Water-	
Weed or Crop Name						Species	Crabgras	Species	Ragweed	melon	melon	
Weed or Crop Name						Control	Control	Control	Control	Yld-H1	Yld-H1	
Rating Data Type						%	%	%	%	lbs/plot	#/plot	
Rating Unit						07/28/11	07/28/11	07/28/11	07/28/11	07/28/11	07/28/11	
Rating Date												
Trt	Treatment	Form	Form	Rate	Grow	Appl						
No.	Name	Conc	Type	Rate	Stg	Code						
1	Untreated Check						26.7b	10.0c	33.3b	33.3b	64.1a	6a
2	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	100.0a	43.3b	80.0a	100.0a	131.1a	9a
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A						
3	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	95.0a	76.0a	100.0a	100.0a	137.1a	8a
	Chateau.....flumioxazin	51 WG		0.096 lb ai/A	Directed	A						
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed	A						
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A						
4	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	100.0a	71.7a	100.0a	100.0a	107.7a	7a
	Chateau.....flumioxazin	51 WG		0.064 lb ai/A	Directed	A						
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed	A						
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A						
5	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	100.0a	58.3ab	93.3a	100.0a	121.7a	9a
	Reflex.....fomesafen	2 L		0.375 lb ai/A	Directed	A						
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed	A						
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A						
6	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	100.0a	68.3ab	100.0a	100.0a	58.6a	4a
	Reflex.....fomesafen	2 L		0.25 lb ai/A	Directed	A						
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed	A						
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A						
7	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	100.0a	58.3ab	90.0a	100.0a	141.8a	9a
	Strategy Premix	2.1 E		0.394 lb ai/A	Directed	A						
	Curbit.....ethalfluralin	3 E		0.187 lb ai/A	Directed	A						
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A						
8	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	100.0a	55.0ab	96.7a	100.0a	91.2a	7a
	Strategy Premix	2.1 E		0.394 lb ai/A	Directed	A						
	Curbit.....ethalfluralin	3 E		0.187 lb ai/A	Directed	A						
	Sandea.....halosulfuron	75 DF		0.0313 lb ai/A	Directed	A						
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A						
9	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	96.7a	78.3a	100.0a	100.0a	91.2a	6a
	Fierce Premix	76 WG		0.142 lb ai/A	Directed	A						
	---flumioxazin											
	---V-10206											
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A						
10	Gramoxone Inteon..paraquat	2 SL		0.5 lb ai/A	Directed	A	96.7a	73.3a	100.0a	100.0a	102.2a	7a
	Sinbar.....terbacil	80 W		0.0335 lb ai/A	Directed	A						
	Sandea.....halosulfuron	75 DF		0.0313 lb ai/A	Directed	A						
	Nonionic Surfactant	100 L		0.25 % v/v	Directed	A						
LSD (P=.05)						25.78	27.72	35.69	31.32	65.29	4.3	
Standard Deviation						15.03	16.16	20.81	18.26	38.06	2.5	
CV						16.42	27.26	23.29	19.56	36.36	35.01	
Replicate F						1.074	0.523	0.239	1.000	1.984	1.081	
Replicate Prob(F)						0.3626	0.6013	0.7901	0.3874	0.1665	0.3603	
Treatment F						6.941	4.824	2.973	4.000	1.740	1.213	
Treatment Prob(F)						0.0003	0.0022	0.0235	0.0060	0.1517	0.3460	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code						CITLA	CITLA	CITLA	CITLA	CITLA	
Crop Code						Water-	Water-	Water-	Water-	Water-	
Weed or Crop Name						melon	melon	melon	melon	melon	
Weed or Crop Name						Yld-H1	Yld-H2	Yld-H2	Yld-Ttl	Yld-Ttl	
Rating Data Type						# rotten	lbs/plot	#/plot	lbs/plot	#/plot	
Rating Unit						07/28/11	08/09/11	08/09/11			
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code					
1	Untreated Check						1 a	14.9 a	1 a	79.0 d	7 a
2	Gramoxone Inteon..paraquat Nonionic Surfactant	2 SL 100 L		0.5 lb ai/A 0.25 % v/v	Directed Directed	A A	0 a	35.9 a	2 a	167.1 abc	11 a
3	Gramoxone Inteon..paraquat Chateau.....flumioxazin Curbit.....ethalfluralin Nonionic Surfactant	2 SL 51 WG 3 E 100 L		0.5 lb ai/A 0.096 lb ai/A 0.47 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	2 a	49.4 a	2 a	186.5 a	11 a
4	Gramoxone Inteon..paraquat Chateau.....flumioxazin Curbit.....ethalfluralin Nonionic Surfactant	2 SL 51 WG 3 E 100 L		0.5 lb ai/A 0.064 lb ai/A 0.47 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	2 a	64.6 a	4 a	172.3 ab	11 a
5	Gramoxone Inteon..paraquat Reflex.....fomesafen Curbit.....ethalfluralin Nonionic Surfactant	2 SL 2 L 3 E 100 L		0.5 lb ai/A 0.375 lb ai/A 0.47 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	0 a	43.2 a	2 a	164.9 abc	11 a
6	Gramoxone Inteon..paraquat Reflex.....fomesafen Curbit.....ethalfluralin Nonionic Surfactant	2 SL 2 L 3 E 100 L		0.5 lb ai/A 0.25 lb ai/A 0.47 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	1 a	66.2 a	4 a	124.8 bcd	8 a
7	Gramoxone Inteon..paraquat Strategy Premix Curbit.....ethalfluralin Nonionic Surfactant	2 SL 2.1 E 3 E 100 L		0.5 lb ai/A 0.394 lb ai/A 0.187 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	1 a	23.7 a	1 a	165.4 abc	10 a
8	Gramoxone Inteon..paraquat Strategy Premix Curbit.....ethalfluralin Sanda.....halosulfuron Nonionic Surfactant	2 SL 2.1 E 3 E 75 DF 100 L		0.5 lb ai/A 0.394 lb ai/A 0.187 lb ai/A 0.0313 lb ai/A 0.25 % v/v	Directed Directed Directed Directed Directed	A A A A A	1 a	26.5 a	1 a	117.7 cd	8 a
9	Gramoxone Inteon..paraquat Fierce Premix ---flumioxazin ---V-10206 Nonionic Surfactant	2 SL 76 WG 100 L		0.5 lb ai/A 0.142 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	1 a	77.6 a	5 a	168.8 abc	11 a
10	Gramoxone Inteon..paraquat Sinbar.....terbacil Sanda.....halosulfuron Nonionic Surfactant	2 SL 80 W 75 DF 100 L		0.5 lb ai/A 0.0335 lb ai/A 0.0313 lb ai/A 0.25 % v/v	Directed Directed Directed Directed	A A A A	1 a	47.0 a	3 a	149.3 abc	10 a
LSD (P=.05)						1.8	51.66	3.2	51.88	3.1	
Standard Deviation						1.1	30.12	1.9	30.24	1.8	
CV						111.2	67.07	68.01	20.22	18.0	
Replicate F						0.808	2.636	2.383	2.034	0.942	
Replicate Prob(F)						0.4614	0.0991	0.1208	0.1598	0.4081	
Treatment F						0.798	1.363	1.646	3.519	2.105	
Treatment Prob(F)						0.6230	0.2746	0.1758	0.0111	0.0856	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Chateau for Watermelons

Trial ID: MELN2b-11 Cooperator:
 Location: LESREC Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Watermelon **CITLA** **Variety:** Millionaire
Planting Date: 05/24/11 **Planting Method:** Transplanted- Machine

SITE AND DESIGN

Plot Width, Unit: 4.7 FT **Plot Length, Unit:** 30 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Conventional Tillage
Trial Initiation Comments: Treatments were applied with a 2-hooded hand boom

APPLICATION DESCRIPTION

	A
Application Date:	06/07/11
Time of Day:	10:30 am
Application Method:	Spray
Application Timing:	Directed
Applic. Placement:	BroDir
Air Temp., Unit:	82 F
% Relative Humidity:	61
Wind Velocity, Unit:	3 mph
Wind Direction:	Southwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	81 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Dry
Leaf Surf. Moisture:	Dry
% Cloud Cover:	5

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Backpack
Operating Pressure:	31 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 in
Boom Length, Unit:	4 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	CO2

Trial Comments

June 21, 2011: Ratings are based on postemergence control of the weeds at time of application. Pigweed and common lambsquarters was in the untreated check, but not observed in any other treatment.

Due to dry weather no weed seedlings have emerged since treatments.

Chateau for Watermelons													
Trial ID: MELN2b-11 Cooperator:													
Location: LESREC Investigator: Mark VanGessel													
Weed Code	CITLA	CITLA	DIGSA	POROL	CITLA	DIGSA							
Crop Code	Water-	Water-	Large	Common	Water-	Large							
Weed or Crop Name	melon	melon	Crabgras	Purslane	melon	Crabgras							
Weed or Crop Name	Leafburn	Stunting	Control	Control	Stunting	Control							
Rating Data Type	%	%	%	%	%	%							
Rating Unit	06/09/11	06/21/11	06/21/11	06/21/11	08/02/11	08/02/11							
Rating Date													
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg							
1	Untreated Check						0.0 d	0.0 a	0.0 b	0.0 b	0.0 a	0.0 c	
2	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A		Directed	8.0 c	6.7 a	95.7 a	98.3 a	0.0 a	78.7 ab	
	Nonionic Surfactant	100 L		0.25 % v/v		Directed							
3	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A		Directed	14.0 ab	11.3 a	93.3 a	100.0 a	3.3 a	80.7 ab	
	Chateau.....flumioxazin	51 WG		0.096 lb ai/A		Directed							
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A		Directed							
	Nonionic Surfactant	100 L		0.25 % v/v		Directed							
4	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A		Directed	14.0 ab	9.0 a	92.7 a	100.0 a	0.0 a	76.7 ab	
	Chateau.....flumioxazin	51 WG		0.064 lb ai/A		Directed							
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A		Directed							
	Nonionic Surfactant	100 L		0.25 % v/v		Directed							
5	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A		Directed	17.3 a	12.3 a	88.3 a	96.0 a	6.7 a	87.7 a	
	Reflex.....fomesafen	2 L		0.375 lb ai/A		Directed							
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A		Directed							
	Nonionic Surfactant	100 L		0.25 % v/v		Directed							
6	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A		Directed	13.0 ab	9.7 a	86.0 a	100.0 a	3.3 a	80.7 ab	
	Reflex.....fomesafen	2 L		0.25 lb ai/A		Directed							
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A		Directed							
	Nonionic Surfactant	100 L		0.25 % v/v		Directed							
7	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A		Directed	17.3 a	10.7 a	87.7 a	100.0 a	0.0 a	72.0 b	
	Strategy Premix	2.1 E		0.394 lb ai/A		Directed							
	Curbit.....ethalfluralin	3 E		0.187 lb ai/A		Directed							
	Nonionic Surfactant	100 L		0.25 % v/v		Directed							
8	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A		Directed	10.0 bc	6.7 a	95.0 a	100.0 a	0.0 a	81.3 ab	
	Strategy Premix	2.1 E		0.394 lb ai/A		Directed							
	Curbit.....ethalfluralin	3 E		0.187 lb ai/A		Directed							
	Sandea.....halosulfuron	75 DF		0.0313 lb ai/A		Directed							
	Nonionic Surfactant	100 L		0.25 % v/v		Directed							
9	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A		Directed	13.7 ab	10.3 a	86.0 a	100.0 a	0.0 a	81.7 ab	
	Fierce Premix	76 WG		0.142 lb ai/A		Directed							
	---flumioxazin												
	---V-10206												
	Nonionic Surfactant	100 L		0.25 % v/v		Directed							
LSD (P=.05)							4.86	8.88	12.53	4.43	5.27	14.82	
Standard Deviation							2.81	5.13	7.24	2.56	3.04	8.56	
CV							23.54	60.22	8.99	2.9	205.4	12.05	
Replicate F							0.625	2.577	4.437	0.618	2.800	7.810	
Replicate Prob(F)							0.5479	0.1071	0.0293	0.5516	0.0906	0.0043	
Treatment F							11.064	1.587	53.006	503.564	1.900	29.754	
Treatment Prob(F)							0.0001	0.2053	0.0001	0.0001	0.1307	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code					PANDI	AMACH	CHEAL	CITLA	CITLA	CITLA		
Crop Code					Fall	Smooth	Common	CITLA	CITLA	CITLA		
Weed or Crop Name					Panicum	Pigweed	Lambqtrs	Water-	Water-	Water-		
Weed or Crop Name					Control	Control	Control	melon	melon	melon		
Rating Data Type					%	%	%	Yld-H1	Yld-H1	Yld-H1		
Rating Unit					%	%	%	lbs/plot	#/plot	# rotten		
Rating Date					08/02/11	08/02/11	08/02/11	08/02/11	08/02/11	08/02/11		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Stg						
1	Untreated Check						0.0b	0.0c	0.0b	404.7a	21a	0a
2	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		95.0a	93.3ab	100.0a	356.0a	19a	0a
	Nonionic Surfactant	100 L		0.25 % v/v	Directed							
3	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		96.7a	100.0a	100.0a	329.9a	17a	0a
	Chateau.....flumioxazin	51 WG		0.096 lb ai/A	Directed							
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed							
	Nonionic Surfactant	100 L		0.25 % v/v	Directed							
4	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		100.0a	100.0a	100.0a	449.6a	24a	0a
	Chateau.....flumioxazin	51 WG		0.064 lb ai/A	Directed							
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed							
	Nonionic Surfactant	100 L		0.25 % v/v	Directed							
5	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		100.0a	98.3a	100.0a	394.5a	20a	0a
	Reflex.....fomesafen	2 L		0.375 lb ai/A	Directed							
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed							
	Nonionic Surfactant	100 L		0.25 % v/v	Directed							
6	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		100.0a	100.0a	100.0a	382.1a	21a	0a
	Reflex.....fomesafen	2 L		0.25 lb ai/A	Directed							
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed							
	Nonionic Surfactant	100 L		0.25 % v/v	Directed							
7	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		96.0a	89.3b	100.0a	465.6a	23a	1a
	Strategy Premix	2.1 E		0.394 lb ai/A	Directed							
	Curbit.....ethalfluralin	3 E		0.187 lb ai/A	Directed							
	Nonionic Surfactant	100 L		0.25 % v/v	Directed							
8	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		100.0a	100.0a	100.0a	521.8a	27a	0a
	Strategy Premix	2.1 E		0.394 lb ai/A	Directed							
	Curbit.....ethalfluralin	3 E		0.187 lb ai/A	Directed							
	Sandea.....halosulfuron	75 DF		0.0313 lb ai/A	Directed							
	Nonionic Surfactant	100 L		0.25 % v/v	Directed							
9	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		98.3a	100.0a	100.0a	385.9a	20a	0a
	Fierce Premix	76 WG		0.142 lb ai/A	Directed							
	---flumioxazin											
	---V-10206											
	Nonionic Surfactant	100 L		0.25 % v/v	Directed							
	LSD (P=.05)						6.12	8.27	0.00	182.88	7.9	0.9
	Standard Deviation						3.53	4.78	0.00	105.65	4.6	0.5
	CV						4.05	5.51	0.0	25.77	21.45	191.06
	Replicate F						1.184	2.642	0.000	1.317	1.931	0.151
	Replicate Prob(F)						0.3316	0.1020	1.0000	0.2955	0.1773	0.8611
	Treatment F						258.614	141.037	0.000	0.945	1.253	0.604
	Treatment Prob(F)						0.0001	0.0001	1.0000	0.5086	0.3322	0.7618

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Weed Code					CITLA	CITLA	CITLA	CITLA	CITLA		
Crop Code					Water-	Water-	Water-	Water-	Water-		
Weed or Crop Name					melon	melon	melon	melon	melon		
Weed or Crop Name					Yld-H2	Yld-H2	Yld-H2	Yld-Ttl	Yld-Ttl		
Rating Data Type					lbs/plot	#/plot	# rotten	lbs/plot	#/plot		
Rating Unit					08/24/11	08/24/11	08/24/11				
Rating Date											
Trt	Treatment	Form	Form	Rate	Grow						
No.	Name	Conc	Type	Rate	Unit	Stg					
1	Untreated Check						208.1 a	13 a	0 a	612.8 a	34 a
2	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		315.3 a	18 a	0 a	671.3 a	37 a
	Nonionic Surfactant	100 L		0.25 % v/v	Directed						
3	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		287.4 a	16 a	0 a	617.3 a	33 a
	Chateau.....flumioxazin	51 WG		0.096 lb ai/A	Directed						
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed						
	Nonionic Surfactant	100 L		0.25 % v/v	Directed						
4	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		386.0 a	18 a	0 a	835.6 a	42 a
	Chateau.....flumioxazin	51 WG		0.064 lb ai/A	Directed						
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed						
	Nonionic Surfactant	100 L		0.25 % v/v	Directed						
5	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		326.8 a	18 a	0 a	721.3 a	39 a
	Reflex.....fomesafen	2 L		0.375 lb ai/A	Directed						
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed						
	Nonionic Surfactant	100 L		0.25 % v/v	Directed						
6	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		355.0 a	20 a	0 a	737.1 a	41 a
	Reflex.....fomesafen	2 L		0.25 lb ai/A	Directed						
	Curbit.....ethalfluralin	3 E		0.47 lb ai/A	Directed						
	Nonionic Surfactant	100 L		0.25 % v/v	Directed						
7	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		221.8 a	12 a	0 a	687.4 a	36 a
	Strategy Premix	2.1 E		0.394 lb ai/A	Directed						
	Curbit.....ethalfluralin	3 E		0.187 lb ai/A	Directed						
	Nonionic Surfactant	100 L		0.25 % v/v	Directed						
8	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		332.1 a	19 a	0 a	853.9 a	46 a
	Strategy Premix	2.1 E		0.394 lb ai/A	Directed						
	Curbit.....ethalfluralin	3 E		0.187 lb ai/A	Directed						
	Sandea.....halosulfuron	75 DF		0.0313 lb ai/A	Directed						
	Nonionic Surfactant	100 L		0.25 % v/v	Directed						
9	Gramoxone Inteon..paraquat	2 SL		0.75 lb ai/A	Directed		339.7 a	20 a	0 a	725.6 a	40 a
	Fierce Premix	76 WG		0.142 lb ai/A	Directed						
	---flumioxazin										
	---V-10206										
	Nonionic Surfactant	100 L		0.25 % v/v	Directed						
LSD (P=.05)							150.80	7.8	0.6	230.87	11.1
Standard Deviation							87.12	4.5	0.4	133.38	6.4
CV							28.28	26.15	318.2	18.58	16.68
Replicate F							5.379	8.544	0.000	5.858	9.163
Replicate Prob(F)							0.0163	0.0030	1.0000	0.0123	0.0022
Treatment F							1.390	1.100	0.667	1.203	1.184
Treatment Prob(F)							0.2732	0.4125	0.7133	0.3570	0.3663

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Experimental Herbicides for Watermelons and Cantalopes
 Crop Safety Evaluations
 Trial ID: MELN3-11 Cooperator:
 Location: Field #11 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Common Purslane	POROL	Portulaca oleracea L.
2.	Goosegrass	ELEIN	Eleusine indica (L.) Gaertn.
3.	Stinkgrass	ERAME	Eragrostis cilianensis (All.) E.Mosher
4.	Large Crabgrass	DIGSA	Digitaria sanguinalis (L.) Scop.
5.	Common Ragweed	AMBEL	Ambrosia artemisifolia L.
6.	Carpetweed	MOLVE	Mollugo verticillata L.

Crop 1: Watermelon **CITLA** **Variety:** Millionaire
Planting Date: 06/07/11 **Planting Method:** Transplanted- Machine
Rate: 1 pl/3row-ft **Row Spacing:** 8 ft **Seed Bed:** plasticulture

Crop 2: Cantalope **CUMMC** **Variety:** Athena
Planting Date: 06/07/11 **Planting Method:** Transplanted- Machine
Rate: 1 pl/3row-ft **Row Spacing:** 8 ft **Seed Bed:** plasticulture

SITE AND DESIGN

Plot Width, Unit: 7 FT **Plot Length, Unit:** 45 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Chisel Plowed, Disked & Field Cultivated

SOIL DESCRIPTION

% Sand: 83 **% OM:** 0.7 **Texture:** loamy sand
% Silt: 12 **pH:** 5.5
% Clay: 5 **CEC:** 4.0 **Fert. Level:** Medium

Irrigation/Type: Trickle **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.2 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	06/15/11
Time of Day:	8:00 am
Application Method:	Spray
Application Timing:	POST
Applic. Placement:	BroDir
Air Temp., Unit:	59 F
% Relative Humidity:	83
Wind Velocity, Unit:	4 mph
Wind Direction:	Northwest
Dew Presence (Y/N):	Y
Soil Temp., Unit:	57 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Moist
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code:	CITLA
Growth Stage:	vine
Height, Unit:	21 in
Crop Health:	Good
Crop 2 Code:	CUMMC
Growth Stage:	vine
Height, Unit:	21 in
Crop Health:	Good

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	POROL
Growth Stage:	vegetative
Height, Unit:	12 in
Density,Unit:	0-12 m2
Weed 2 Code:	ELEIN
Growth Stage:	1-3 tiller
Height, Unit:	5 in
Density,Unit:	0-16 m2
Weed 3 Code:	ERAME
Growth Stage:	3-5 tiller
Height, Unit:	7 in
Density,Unit:	0-24 m2
Weed 4 Code:	DIGSA
Growth Stage:	3 tiller
Height, Unit:	4 in
Density,Unit:	0-4 m2
Weed 5 Code:	AMBEL
Growth Stage:	vegetative
Height, Unit:	5 in
Density,Unit:	0-4 m2
Weed 6 Code:	MOLVE
Growth Stage:	vegetative
Height, Unit:	7 in
Density,Unit:	0-25 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	25 psi
Nozzle Type:	XRTEEJET
Nozzle Size:	95015E
Nozzle Spacing, Unit:	8 in
Band Width, Unit:	32 in
Boom Length, Unit:	6 nozl
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	19.6 gpa
Propellant:	Comp. Air

Trial Comments

6/15/11 - Flaps were removed from sprayer hoods to promote additional herbicide drift.

8/4/11 - Plot 202 and 205 missing 1 Cantalope plant. Missing plants were missing early on due to fox or deer. Something pulled them out.

Experimental Herbicides for Watermelons and Cantalopes							CITLA	CUMMC	CITLA	CUMMC	CITLA	CUMMC
Crop Safety Evaluations							Water-	Canta-	Water-	Canta-	Water-	Canta-
Trial ID: MELN3-11 Cooperator:							melon	lope	melon	lope	melon	lope
Location: Field #11 Investigator: Mark VanGessel							Injury	Injury	Injury	Injury	Injury	Injury
Crop Code							%	%	%	%	%	%
Weed or Crop Name							06/17/11	06/17/11	06/23/11	06/23/11	06/29/11	06/29/11
Rating Data Type												
Rating Unit												
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg							
1	Untreated Check					1.7 a	2.7 c	0.0 a	0.0 c	0.0 a	0.0 b	
2	Reflex.....fomesafen	2 L		0.375 lb ai/A	POST	5.7 a	10.3 bc	0.0 a	8.7 c	2.3 a	4.7 b	
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST							
	Nonionic Surfactant	100 L		0.25 % v/v	POST							
3	Chateau.....flumioxazin	51 WG		0.096 lb ai/A	POST	13.0 a	15.7 ab	18.3 a	31.7 ab	8.3 a	28.3 a	
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST							
	Nonionic Surfactant	100 L		0.25 % v/v	POST							
4	Dual II.....metolachlor	7.8 E		1.22 lb ai/A	POST	9.0 a	13.7 bc	8.3 a	20.0 abc	6.0 a	10.0 b	
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST							
	Nonionic Surfactant	100 L		0.25 % v/v	POST							
5	Sandea.....halosulfuron	75 DF		0.0314 lb ai/A	POST	12.3 a	9.3 bc	4.7 a	9.0 c	2.3 a	7.3 b	
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST							
	Nonionic Surfactant	100 L		0.25 % v/v	POST							
6	Sinbar.....terbacil	80 W		0.2 lb ai/A	POST	10.7 a	14.0 bc	6.7 a	16.0 bc	3.3 a	6.3 b	
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST							
	Nonionic Surfactant	100 L		0.25 % v/v	POST							
7	Sharpen.....saflufenacil	2.85 SC		0.0445 lb ai/A	POST	21.7 a	27.0 a	21.0 a	40.0 a	15.0 a	29.3 a	
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST							
	Nonionic Surfactant	100 L		0.25 % v/v	POST							
8	No residual					7.3 a	10.0 bc	2.3 a	8.3 c	0.0 a	5.0 b	
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST							
	Nonionic Surfactant	100 L		0.25 % v/v	POST							
LSD (P=.05)						12.44	12.13	15.82	22.05	13.02	17.49	
Standard Deviation						7.10	6.92	9.03	12.59	7.43	9.98	
CV						69.84	53.96	117.8	75.35	159.26	87.77	
Replicate F						0.179	0.814	0.106	0.660	0.374	0.310	
Replicate Prob(F)						0.8377	0.4629	0.8999	0.5324	0.6946	0.7385	
Treatment F						2.100	3.045	2.354	3.383	1.383	3.735	
Treatment Prob(F)						0.1124	0.0362	0.0819	0.0249	0.2863	0.0172	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Crop Code						CITLA	CUMMC	CITLA	CITLA	CUMMC	CUMMC	CUMMC	
Weed or Crop Name						Water-	Canta-	Water-	Water-	Canta-	Canta-	Canta-	
Weed or Crop Name						melon	lope	melon	melon	lope	lope	lope	
Rating Data Type						Injury	Injury	Yield-H1	Yield-H1	Yield-H1	Yield-H1	Yield-H2	
Rating Unit						%	%	lbs/plot	#/plot	lbs/plot	#/plot	lbs/plot	
Rating Date						08/04/11	08/04/11	08/04/11	08/04/11	07/25/11	07/25/11	07/28/11	
Trt	Treatment	Form	Form	Rate	Grow								
No.	Name	Conc	Type	Rate	Unit	Stg							
1	Untreated Check						0.0 a	0.0 a	224.8 a	14 a	47.5 a	9 a	11.5 a
2	Reflex.....fomesafen	2L		0.375 lb ai/A	POST		0.0 a	10.0 a	243.7 a	15 a	34.9 a	6 a	8.6 a
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100 L		0.25 % v/v	POST								
3	Chateau.....flumioxazin	51 WG		0.096 lb ai/A	POST		3.3 a	8.3 a	183.0 a	13 a	20.3 a	5 a	13.0 a
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100 L		0.25 % v/v	POST								
4	Dual II.....metolachlor	7.8 E		1.22 lb ai/A	POST		6.0 a	0.0 a	161.3 a	11 a	21.6 a	4 a	6.5 a
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100 L		0.25 % v/v	POST								
5	Sandea.....halosulfuron	75 DF		0.0314 lb ai/A	POST		0.0 a	4.0 a	233.6 a	17 a	27.5 a	5 a	24.8 a
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100 L		0.25 % v/v	POST								
6	Sinbar.....terbacil	80 W		0.2 lb ai/A	POST		5.0 a	2.3 a	237.8 a	17 a	37.8 a	6 a	5.6 a
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100 L		0.25 % v/v	POST								
7	Sharpen.....saflufenacil	2.85 SC		0.0445 lb ai/A	POST		8.3 a	19.0 a	213.8 a	15 a	28.2 a	5 a	1.5 a
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100 L		0.25 % v/v	POST								
8	No residual						0.0 a	1.7 a	231.4 a	16 a	32.4 a	6 a	8.8 a
	Gramoxone Inteon..paraquat	2 SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100 L		0.25 % v/v	POST								
LSD (P=.05)							9.30	12.88	110.88	5.5	25.49	4.1	17.73
Standard Deviation							5.31	7.36	63.31	3.1	14.55	2.4	10.12
CV							187.41	129.8	29.28	21.2	46.55	41.28	101.03
Replicate F							0.755	0.375	0.963	1.395	4.640	4.284	1.570
Replicate Prob(F)							0.4882	0.6939	0.4057	0.2803	0.0284	0.0354	0.2425
Treatment F							1.175	2.359	0.637	1.060	1.129	1.122	1.414
Treatment Prob(F)							0.3758	0.0814	0.7192	0.4364	0.3994	0.4026	0.2746

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Delaware

Crop Code						CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	
Weed or Crop Name						Canta-	Canta-	Canta-	Canta-	Canta-	Canta-	Canta-	
Weed or Crop Name						lope	lope	lope	lope	lope	lope	lope	
Rating Data Type						Yield-H2	Yield-H3	Yield-H3	Yield-H4	Yield-H4	Yld-Totl	Yld-Totl	
Rating Unit						#/plot	lbs/plot	#/plot	lbs/plot	#/plot	lbs/plot	#/plot	
Rating Date						07/28/11	08/02/11	08/02/11	08/05/11	08/05/11			
Trt	Treatment	Form	Form	Rate	Grow								
No.	Name	Conc	Type	Rate	Unit	Stg							
1	Untreated Check						2 a	17.7 a	2 a	4.2 a	1 a	81 a	13 a
2	Reflex.....fomesafen	2L		0.375 lb ai/A	POST		2 a	20.0 a	3 a	2.4 a	0 a	66 a	11 a
	Gramoxone Inteon..paraquat	2SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100L		0.25 % v/v	POST								
3	Chateau.....flumioxazin	51WG		0.096 lb ai/A	POST		2 a	17.2 a	3 a	4.2 a	1 a	55 a	10 a
	Gramoxone Inteon..paraquat	2SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100L		0.25 % v/v	POST								
4	Dual II.....metolachlor	7.8E		1.22 lb ai/A	POST		1 a	30.9 a	4 a	9.2 a	1 a	68 a	11 a
	Gramoxone Inteon..paraquat	2SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100L		0.25 % v/v	POST								
5	Sandea.....halosulfuron	75DF		0.0314 lb ai/A	POST		4 a	30.7 a	4 a	5.7 a	1 a	89 a	13 a
	Gramoxone Inteon..paraquat	2SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100L		0.25 % v/v	POST								
6	Sinbar.....terbacil	80W		0.2 lb ai/A	POST		1 a	18.7 a	3 a	5.5 a	1 a	68 a	11 a
	Gramoxone Inteon..paraquat	2SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100L		0.25 % v/v	POST								
7	Sharpen.....saflufenacil	2.85SC		0.0445 lb ai/A	POST		0 a	13.7 a	2 a	19.1 a	3 a	62 a	10 a
	Gramoxone Inteon..paraquat	2SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100L		0.25 % v/v	POST								
8	No residual						2 a	25.8 a	4 a	9.3 a	1 a	76 a	12 a
	Gramoxone Inteon..paraquat	2SL		0.6 lb ai/A	POST								
	Nonionic Surfactant	100L		0.25 % v/v	POST								
LSD (P=.05)							2.8	27.41	3.9	11.34	1.6	22.7	3.7
Standard Deviation							1.6	15.65	2.2	6.47	0.9	12.9	2.1
CV							100.81	71.63	70.44	86.93	86.06	18.34	18.43
Replicate F							0.850	0.196	0.234	3.722	3.785	8.200	6.203
Replicate Prob(F)							0.4481	0.8245	0.7940	0.0506	0.0485	0.0044	0.0118
Treatment F							1.224	0.516	0.383	2.014	2.067	2.105	1.187
Treatment Prob(F)							0.3526	0.8079	0.8974	0.1254	0.1173	0.1118	0.3703

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

POST Grass Herbicides with Early Season Fungicide Treatments

Trial ID: MELN5-11 Cooperator:
 Location: Field #1 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

CROP AND WEED DESCRIPTION

Weed	Common Name	Code	Scientific Name
1.	Goosegrass	ELEIN	Eleusine indica (L.) Gaertn.

Crop 1: Watermelon **CITLA** **Variety:** Millionaire
Planting Date: 06/15/11 **Planting Method:** Transplanted- Hand
Rate: 1 pl/3row-ft **Row Spacing:** 84 in **Seed Bed:** plasticulture

Crop 2: Cantalope **CUMMC** **Variety:** Athena
Planting Date: 06/15/11 **Planting Method:** Transplanted- Hand
Rate: 1 pl/3row-ft **Row Spacing:** 84 in **Seed Bed:** plasticulture

SITE AND DESIGN

Plot Width, Unit: 7 FT **Plot Length, Unit:** 45 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Conventional Tillage, Plasticulture

SOIL DESCRIPTION

% Sand: 77 **% OM:** 0.6 **Texture:** sandy loam
% Silt: 14 **pH:** 5.5
% Clay: 9 **CEC:** 4.8 **Fert. Level:** Medium

Irrigation/Type: Trickle **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.2 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	06/29/11
Time of Day:	9:00 am
Application Method:	Spray
Application Timing:	POST
Applic. Placement:	Brdcst
Air Temp., Unit:	74 F
% Relative Humidity:	85
Wind Velocity, Unit:	1 mph
Wind Direction:	North
Dew Presence (Y/N):	N
Soil Temp., Unit:	73 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	Dry
% Cloud Cover:	80

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code:	CITLA
Growth Stage:	vining
Height, Unit:	40 in
Crop Health:	Good
Crop 2 Code:	CUMMC
Growth Stage:	vining
Height, Unit:	34 in
Crop Health:	Good

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	ELEIN
Growth Stage:	eaFlower
Height, Unit:	10 in
Density,Unit:	0-20 m2

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	4 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Trial Comments

7/22/11 - Annual grasses include: Goosegrass, crabgrass, and fall panicum. Plots 304, 402, and 501 contain mostly goosegrass.

POST Grass Herbicides with Early Season Fungicide Treatments													
Trial ID: MELN5-11 Cooperator:													
Location: Field #1 Investigator: Mark VanGessel													
Weed Code	CITLA	CUMMC	CITLA	CUMMC	ELEIN	GGGAN	GGGAN						
Crop Code	Watrmeln	Cantalop	Watrmeln	Cantalop	Goose-	Annual	Annual						
Weed or Crop Name	Millionr	Athena	Millionr	Athena	grass	Grasses	Grasses						
Weed or Crop Name	Leafburn	Leafburn	Stunting	Stunting	Control	Control	Control						
Rating Data Type	%	%	%	%	%	%	%						
Rating Unit	07/08/11	07/08/11	07/11/11	07/11/11	07/11/11	07/22/11	08/08/11						
Rating Date													
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg							
1	Untreated Check						0.0c	0.0c	0.0c	0.0b	0.0d	0.0f	28.3b
2	Select Max.....clethodim	1 EC		0.125 lb ai/A	POST		0.0c	0.0c	0.0c	0.0b	88.3a	97.3a	96.3a
	Nonionic Surfactant	100L		0.25 % v/v	POST								
3	Select Max.....clethodim	1 EC		0.125 lb ai/A	POST		6.7 ab	20.0 ab	6.7 bc	2.3 b	88.3 a	91.7 ab	86.7 a
	Nonionic Surfactant	100L		0.25 % v/v	POST								
	Pristine	38 WG		0.44 lb ai/A	POST								
	Bravo	6 F		2.25 lb ai/A	POST								
4	Select Max.....clethodim	1 EC		0.0625 lb ai/A	POST		2.7 bc	19.0 ab	11.3 ab	7.3 ab	83.3 ab	73.3 cd	83.3 a
	Crop Oil Concentrate	100L		1.25 % v/v	POST								
	Pristine	38 WG		0.44 lb ai/A	POST								
	Bravo	6 F		2.25 lb ai/A	POST								
5	Poast.....sethoxydim	1.5 L		0.28 lb ai/A	POST		1.7 bc	16.3 b	10.0 ab	5.0 b	68.3 c	56.7 e	69.3 a
	Nonionic Surfactant	100L		0.25 % v/v	POST								
	Pristine	38 WG		0.44 lb ai/A	POST								
	Bravo	6 F		2.25 lb ai/A	POST								
6	Poast.....sethoxydim	1.5 L		0.28 lb ai/A	POST		9.7 a	25.0 a	15.0 a	15.7 a	73.3 bc	69.3 de	80.3 a
	Crop Oil Concentrate	100L		1.25 % v/v	POST								
	Pristine	38 WG		0.44 lb ai/A	POST								
	Bravo	6 F		2.25 lb ai/A	POST								
7	Poast.....sethoxydim	1.5 L		0.28 lb ai/A	POST		0.0c	0.0c	0.0c	3.3 b	78.3 abc	79.3 bcd	83.7 a
	Nonionic Surfactant	100L		0.25 % v/v	POST								
	Dimate.....dimethoate	4 EC		0.5 lb ai/A	POST								
8	Poast.....sethoxydim	1.5 L		0.28 lb ai/A	POST		1.0c	3.3 c	2.3c	5.7 b	88.3 a	93.3 ab	95.7 a
	Crop Oil Concentrate	100L		1.25 % v/v	POST								
	Dimate.....dimethoate	4 EC		0.5 lb ai/A	POST								
9	Poast.....sethoxydim	1.5 L		0.28 lb ai/A	POST		0.0c	1.0c	0.0c	0.0b	76.7 abc	72.7 cd	77.0 a
	Nonionic Surfactant	100L		0.25 % v/v	POST								
10	Poast.....sethoxydim	1.5 L		0.28 lb ai/A	POST		0.0c	0.0c	0.0c	0.0b	85.0 ab	85.0 abc	83.7 a
	Crop Oil Concentrate	100L		1.25 % v/v	POST								
LSD (P=.05)							5.08	6.53	7.21	8.68	13.28	15.06	28.98
Standard Deviation							2.96	3.80	4.20	5.06	7.74	8.78	16.89
CV							136.74	44.93	92.65	128.7	10.6	12.21	21.54
Replicate F							1.519	0.306	2.678	4.606	0.876	0.317	2.749
Replicate Prob(F)							0.2457	0.7399	0.0959	0.0242	0.4333	0.7322	0.0908
Treatment F							3.867	21.839	5.628	2.838	35.326	30.876	3.928
Treatment Prob(F)							0.0070	0.0001	0.0009	0.0285	0.0001	0.0001	0.0065

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Evaluating Grain Sorghum Tolerance to Mesotrione on Sandy Soils

Trial ID: Milo1-11 Cooperator:
 Location: Field #35 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Sorghum **SORVU** **Variety:** SS650
Planting Date: 06/14/11 **Planting Method:** Drilled **Depth:** 0.8 in
Rate: 5 Sd/row-ft **Row Spacing:** 14 in **Seed Bed:** Smooth
Soil Temperature: 72 F **Soil Moisture:** Moist **Emergence Date:** 06/19/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked Twice

SOIL DESCRIPTION

% Sand: 82 **% OM:** 1.2 **Texture:** loamy sand
% Silt: 11 **pH:** 6.0
% Clay: 7 **CEC:** 5.8 **Fert. Level:** Medium
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.1 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	06/16/11
Time of Day:	10:00 am
Application Method:	Spray
Application Timing:	PRE
Applic. Placement:	Brdcst
Air Temp., Unit:	76 F
% Relative Humidity:	43
Wind Velocity, Unit:	2 mph
Wind Direction:	Southwest
Dew Presence (Y/N):	N
Soil Temp., Unit:	73 F
Soil Surf. Moisture:	Dry
Root Zone Moisture:	Dry
Leaf Surf. Moisture:	N/A
% Cloud Cover:	80

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	6 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

(Milo1-11)

University of Delaware

Trial Comments

7/12/11 - Plots 108, 203, & 204 do not have as good morningglory control as other treatments do.

9/12/11 - Looking over the plots to compare heading, there did not appear to be any treatment differences. So early injury did not delay heading.

Evaluating Grain Sorghum Tolerance to Mesotrione on Sandy Soils

Trial ID: Milo1-11 Cooperator:
 Location: Field #35 Investigator: Mark VanGessel

Weed Code					SORVU	SORVU	SORVU	SORVU	AMASS	DIGSA		
Crop Code					Grain	Grain	Grain	Grain	Pigweed	Large		
Weed or Crop Name					Sorghum	Sorghum	Sorghum	Sorghum	Species	Crabgras		
Weed or Crop Name					Whitning	Stunting	Stunting	Stunting	Control	Control		
Rating Data Type					%	%	%	%	%	%		
Rating Unit												
Rating Date					06/25/11	06/25/11	07/01/11	07/12/11	07/12/11	07/12/11		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Unit	Stg						
1	Untreated Check						0.0e	0.0e	0.0d	0.0d	0.0b	0.0b
2	Lumax Premix	3.95	SC	2.47 lb ai/A	PRE		18.3ab	36.7 bc	26.7 b	25.0b	100.0 a	93.3 a
3	Lumax Premix	3.95	SC	1.98 lb ai/A	PRE		14.0 c	36.7 bc	26.7 b	19.0bc	100.0 a	96.0 a
	Bicep II Magnum Premix	5.5	L	0.55 lb ai/A	PRE							
4	Lumax Premix	3.95	SC	1.48 lb ai/A	PRE		15.0 bc	26.7 cd	15.7 c	12.3 c	100.0 a	95.0 a
	Bicep II Magnum Premix	5.5	L	1.1 lb ai/A	PRE							
5	Lumax Premix	3.95	SC	0.99 lb ai/A	PRE		9.0 d	17.3 d	5.7 cd	14.7 c	100.0 a	95.0 a
	Bicep II Magnum Premix	5.5	L	1.65 lb ai/A	PRE							
6	Lumax Premix	3.95	SC	4.94 lb ai/A	PRE		19.0 a	60.0 a	70.0 a	66.7 a	100.0 a	95.0 a
7	Lumax Premix	3.95	SC	2.47 lb ai/A	PRE		19.0 a	46.7 b	30.0 b	17.3 bc	96.0 a	95.0 a
	Atrazine 4L	4	L	0.625 lb ai/A	PRE							
8	Bicep II Magnum Premix	5.5	L	2.75 lb ai/A	PRE		0.0e	3.3e	0.0d	0.0d	94.3 a	86.7 a
LSD (P=.05)							3.64	12.52	10.97	8.59	6.92	20.07
Standard Deviation							2.08	7.15	6.27	4.90	3.95	11.46
CV							17.64	25.16	28.7	25.31	4.58	13.98
Replicate F							0.010	0.590	0.243	0.083	2.244	0.726
Replicate Prob(F)							0.9904	0.5675	0.7875	0.9206	0.1427	0.5011
Treatment F							44.345	25.397	40.244	55.158	234.549	25.279
Treatment Prob(F)							0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

No-Till Peas	
Trial ID: Pea1-11	Cooperator:
Location: Field #4	Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION			
Study Director: Mark VanGessel	Title: Extension Specialist, Weed Science		
Affiliation: University of Delaware Research & Education Center			
Address: 16483 County Seat Hwy	City: Georgetown	State: DE	Zip Code: 19947

CROP AND WEED DESCRIPTION			
Weed	Common Name	Code	Scientific Name
1.	Barley	HORVX	Hordeum vulgare L.em.lam.

Crop 1: Pea	PIBSS	Variety: Rose
Planting Date: 04/07/11	Planting Method: Drilled	Depth: 0.75 in
Rate: 250 lb/A	Row Spacing: 7 in	Seed Bed: Firm/Smooth
Soil Temperature: 60 F	Soil Moisture: Moist	Emergence Date: 04/17/11

SITE AND DESIGN			
Plot Width, Unit: 10 FT	Plot Length, Unit: 44 FT	Reps: 3	
Site Type: Field	Study Design: SPLIT-PLOT		
Tillage Type: Disked or No-Tillage			
Trial Initiation Comments: Thoroughbred barley was drilled over the entire study area on 10-21-10.			

MAINTENANCE
Field Prep./Maintenance: Treatments were applied in 30% UAN solution, providing 65 lb/A nitrogen.

SOIL DESCRIPTION			
% Sand: 79	% OM: 1.6	Texture: sandy loam	
% Silt: 11	pH: 5.4		
% Clay: 10	CEC: 6.3	Fert. Level: Optimum	
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book			
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown			
Distance: 0.3	Unit: mi		

APPLICATION DESCRIPTION			
	A	B	C
Application Date:	11/29/10	03/15/11	04/07/11
Time of Day:	11:15 am	1:00 pm	3:00 pm
Application Method:	Spray	Spray	Spray
Application Timing:	Fall	Spring	PRE
Applic. Placement:	Brdcst	Brdcst	Brdcst
Air Temp., Unit:	58 F	48 F	57 F
% Relative Humidity:	41	53	60
Wind Velocity, Unit:	2 mph	3 mph	4 mph
Wind Direction:	Northeast	Southeast	Northeast
Dew Presence (Y/N):	Y	N	N
Soil Temp., Unit:	52 F	46 F	58 F
Soil Surf. Moisture:	Moist	Dry	Moist
Root Zone Moisture:	Moist	Moist	Moist
Leaf Surf. Moisture:	Moist	Dry	N/A
% Cloud Cover:	0	30	15

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:	HORVX	HORVX	HORVX
Growth Stage:	1 tiller	3-4 tiller	
Height, Unit:	3 in	5 in	
Density, Unit:	450 m2	450 m2	

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	Tractor	Tractor	Tractor
Operating Pressure:	40 psi	40 psi	40 psi
Nozzle Type:	AIRMIX	AIRMIX	AIRMIX
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	20 in	20 in	20 in
Boom Length, Unit:	6 nozl	6 nozl	6 nozl
Boom Height, Unit:	19 in	21 in	18 in
Ground Speed, Unit:	3 mph	3 mph	2.7 mph
Carrier:	water	water	30%UAN
Spray Volume, Unit:	20 gpa	20 gpa	20 gpa
Propellant:	Comp. Air	Comp. Air	Comp. Air

Trial Comments

3/5/11: No tillage (no cover) had few small henbit; No-till plus barley had heavy pressure of henbit and bittercress with other weeds present of primrose, horseweed, and mouseear chickweed; no-till plus barley and Harmony Extra in the fall had excellent weed control with almost no weeds present

6/3/11: Stand counts and biomass measurements taken for 4 consecutive rows, 1 meter per row. Samples were taken from the center of the plots.

Weed pressure was similar (common lambsquarters, pigweed species, and common ragweed) across all system in the untreated check. Tillage did not noticeably impact summer annual weeds. Pursuit plus Dual and Reflex plus Dual performed very well across all systems, no interaction was observed.

Overall weed control:

0= none; 1= poor, 2= fair; 3= good; 4= excellent

No-Till Peas							PIBSS Pea	ANNBR
Trial ID: Pea1-11 Cooperator:								
Location: Field #4 Investigator: Mark VanGessel								
Weed Code	Crop Code	Weed or Crop Name	Weed or Crop Name	Rating Data Type	Rating Unit	Rating Date	Injury %	Annual Broadlvs Control Rating
							04/09/11	06/03/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Grow Stg	Appl Code	
1	Conventional Tillage Untreated Check							0.0e 0.0d
2	Conventional Tillage Dual Magnum.....s-metolachlor	7.62 E		0.95 lb ai/A		PRE	C	0.0e 1.0c
3	Conventional Tillage Dual Magnum.....s-metolachlor Pursuit.....imazethapyr	7.62 E 2 AS		0.95 lb ai/A 0.0312 lb ai/A		PRE PRE	C C	5.5de 3.0a
4	Conventional Tillage Residual per system Reflex.....fomesafen Dual Magnum.....s-metolachlor	2 L 7.62 E		0.25 lb ai/A 0.95 lb ai/A		PRE PRE	C C	23.3ab 1.7bc
5	No Tillage Roundup WeatherMax..glyphosate Roundup WeatherMax..glyphosate Untreated Check	4.5 AS 4.5 AS		1.4 lb ae/A 1.12 lb ae/A		Fall Spring	A B	0.0e 0.0d
6	No Tillage Roundup WeatherMax..glyphosate Roundup WeatherMax..glyphosate Dual Magnum.....s-metolachlor	4.5 AS 4.5 AS 7.62 E		1.4 lb ae/A 1.12 lb ae/A 0.95 lb ai/A		Fall Spring PRE	A B C	14.0bcd 1.0c
7	No Tillage Roundup WeatherMax..glyphosate Roundup WeatherMax..glyphosate Dual Magnum.....s-metolachlor Pursuit.....imazethapyr	4.5 AS 4.5 AS 7.62 E 2 AS		1.4 lb ae/A 1.12 lb ae/A 0.95 lb ai/A 0.0312 lb ai/A		Fall Spring PRE PRE	A B C C	4.0de 3.0a
8	No Tillage Roundup WeatherMax..glyphosate Roundup WeatherMax..glyphosate Residual per system Reflex.....fomesafen Dual Magnum.....s-metolachlor	4.5 AS 4.5 AS 2 L 7.62 E		1.4 lb ae/A 1.12 lb ae/A 0.25 lb ai/A 0.95 lb ai/A		Fall Spring PRE PRE	A B C C	33.3a 2.0b
9	No Tillage Barley Cover Roundup WeatherMax..glyphosate Untreated Check	4.5 AS		1.12 lb ae/A		Spring	B	0.0e 0.0d
10	No Tillage Barley Cover Roundup WeatherMax..glyphosate Dual Magnum.....s-metolachlor	4.5 AS 7.62 E		1.12 lb ae/A 0.95 lb ai/A		Spring PRE	B C	9.0cde 1.0c
11	No Tillage Barley Cover Roundup WeatherMax..glyphosate Dual Magnum.....s-metolachlor Pursuit.....imazethapyr	4.5 AS 7.62 E 2 AS		1.12 lb ae/A 0.95 lb ai/A 0.0312 lb ai/A		Spring PRE PRE	B C C	10.7cde 3.2a

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code							PIBSS Pea	ANNBR Annual Broadlvs Control Rating	
Crop Code									
Weed or Crop Name							Injury %	04/09/11	
Weed or Crop Name									
Rating Data Type							06/03/11		
Rating Unit									
Rating Date									
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Grow Stg	Appl Code		
12	No Tillage Barley Cover							24.0 ab	3.2 a
	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ae/A		Spring	B		
	Residual per system								
	Reflex.....fomesafen	2	L	0.25 lb ai/A		PRE	C		
	Dual Magnum.....s-metolachlor	7.62	E	0.95 lb ai/A		PRE	C		
13	No Tillage Barley Cover							0.0 e	0.0 d
	Harmony Extra SG Premix	50	SG	0.028 lb ai/A		Fall	A		
	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ae/A		Spring	B		
	Untreated Check								
14	No Tillage Barley Cover							3.3 de	1.0 c
	Harmony Extra SG Premix	50	SG	0.028 lb ai/A		Fall	A		
	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ae/A		Spring	B		
	Dual Magnum.....s-metolachlor	7.62	E	0.95 lb ai/A		PRE	C		
15	No Tillage Barley Cover							14.0 bcd	3.0 a
	Harmony Extra SG Premix	50	SG	0.028 lb ai/A		Fall	A		
	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ae/A		Spring	B		
	Dual Magnum.....s-metolachlor	7.62	E	0.95 lb ai/A		PRE	C		
	Pursuit.....imazethapyr	2	AS	0.0312 lb ai/A		PRE	C		
16	No Tillage Barley Cover							17.3 bc	2.2 b
	Harmony Extra SG Premix	50	SG	0.028 lb ai/A		Fall	A		
	Roundup WeatherMax..glyphosate	4.5	AS	1.12 lb ae/A		Spring	B		
	Residual per system								
	Valor SX.....flumioxazin	51	WG	0.0096 lb ai/A		Fall	A		
	Dual Magnum.....s-metolachlor	7.62	E	0.95 lb ai/A		PRE	C		
LSD (P=.05)							11.27	0.80	
Standard Deviation							6.75	0.48	
CV							68.14	30.5	
Replicate F							4.502	0.566	
Replicate Prob(F)							0.0198	0.5740	
Treatment F							7.048	19.932	
Treatment Prob(F)							0.0001	0.0001	

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Crop Code							PIBSS	PIBSS	PIBSS	PIBSS
Weed or Crop Name							Pea	Pea	Pea	Pea
Weed or Crop Name								#/plts	#/plts	
Rating Data Type							Fresh Wt	sampled	small	Fresh Wt
Rating Unit							kg/0.7m2	/0.7m2	/0.7m2	gr/plant
Rating Date							05/03/11	05/03/11	05/03/11	05/03/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Stg	Appl Code				
1	Conventional Tillage Untreated Check						225 a	71.7 a	0.7 c	3.13 a
2	Conventional Tillage Dual Magnum.....s-metolachlor	7.62 E		0.95 lb ai/A	PRE	C	194 a	74.3 a	3.0 bc	2.63 a
5	No Tillage Roundup WeatherMax..glyphosate Roundup WeatherMax..glyphosate Untreated Check	4.5 AS		1.4 lb ae/A	Fall	A	262 a	77.7 a	3.7 abc	3.38 a
		4.5 AS		1.12 lb ae/A	Spring	B				
6	No Tillage Roundup WeatherMax..glyphosate Roundup WeatherMax..glyphosate Dual Magnum.....s-metolachlor	4.5 AS		1.4 lb ae/A	Fall	A	180 a	65.7 a	6.3 ab	2.72 a
		4.5 AS		1.12 lb ae/A	Spring	B				
		7.62 E		0.95 lb ai/A	PRE	C				
9	No Tillage Barley Cover Roundup WeatherMax..glyphosate Untreated Check	4.5 AS		1.12 lb ae/A	Spring	B	213 a	66.7 a	2.3 c	3.22 a
10	No Tillage Barley Cover Roundup WeatherMax..glyphosate Dual Magnum.....s-metolachlor	4.5 AS		1.12 lb ae/A	Spring	B	218 a	84.7 a	7.0 a	2.58 a
		7.62 E		0.95 lb ai/A	PRE	C				
13	No Tillage Barley Cover Harmony Extra SG Premix Roundup WeatherMax..glyphosate Untreated Check	50 SG		0.028 lb ai/A	Fall	A	256 a	87.0 a	3.3 abc	2.94 a
		4.5 AS		1.12 lb ae/A	Spring	B				
14	No Tillage Barley Cover Harmony Extra SG Premix Roundup WeatherMax..glyphosate Dual Magnum.....s-metolachlor	50 SG		0.028 lb ai/A	Fall	A	178 a	62.7 a	3.7 abc	2.85 a
		4.5 AS		1.12 lb ae/A	Spring	B				
		7.62 E		0.95 lb ai/A	PRE	C				
LSD (P=.05)							65.0	20.38	3.69	0.560
Standard Deviation							37.1	11.64	2.11	0.320
CV							17.19	15.77	56.23	10.89
Replicate F							1.251	0.532	0.197	1.475
Replicate Prob(F)							0.3163	0.5990	0.8236	0.2622
Treatment F							2.192	1.750	2.843	2.457
Treatment Prob(F)							0.1001	0.1766	0.0456	0.0722

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Pea Tolerance to Experimental Herbicides

Trial ID: Pea2-11 Cooperator:
 Location: Field #9 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Pea **PIBSS** **Variety:** Rose
Planting Date: 04/07/11 **Planting Method:** Drilled **Depth:** 0.75 in
Rate: 250 lb/A **Row Spacing:** 7 in **Seed Bed:** Firm/Smooth
Soil Temperature: 60 F **Soil Moisture:** Moist **Emergence Date:** 04/17/11

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Disked

SOIL DESCRIPTION

% Sand: 83 **% OM:** 1.4 **Texture:** loamy sand
% Silt: 8 **pH:** 5.4
% Clay: 9 **CEC:** 6.1 **Fert. Level:** Optimum
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.1 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	04/07/11
Time of Day:	3:45 pm
Application Method:	Spray
Application Timing:	PRE
Applic. Placement:	Brdcst
Air Temp., Unit:	56 F
% Relative Humidity:	60
Wind Velocity, Unit:	4 mph
Wind Direction:	Northeast
Dew Presence (Y/N):	N
Soil Temp., Unit:	58 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	N/A
% Cloud Cover:	15

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Tractor
Operating Pressure:	40 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	20 in
Boom Length, Unit:	4 nozl
Boom Height, Unit:	20 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	Comp. Air

Pea Tolerance to Experimental Herbicides							PIBSS Pea	PIBSS Pea	PIBSS Pea #/plts	PIBSS Pea	PIBSS Pea
Trial ID: Pea2-11 Cooperator:							Stunting %	Stunting %	sampled /0.7m2	Fresh Wt gr/0.7m2	Fresh Wt gr/plt
Location: Field #9 Investigator: Mark VanGessel							04/25/11	05/10/11	05/05/11	05/05/11	05/05/11
Crop Code											
Weed or Crop Name											
Rating Data Type											
Rating Unit											
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Unit	Appl Stg					
1	Untreated Check						0.0 d	0.0 a	32.7 a	51.7 a	1.6 a
2	Dual Magnum.....s-metolachlor	7.62 E		0.95 lb ai/A	PRE	A	9.7 bc	13.3 a	38.3 a	20.3 a	0.7 a
3	KIH-485.....pyroxasulfone	85 WG		0.053 lb ai/A	PRE	A	0.0 d	0.0 a	58.0 a	94.0 a	1.7 a
4	KIH-485.....pyroxasulfone	85 WG		0.08 lb ai/A	PRE	A	10.7 bc	20.0 a	25.7 a	34.7 a	1.4 a
5	Sharpen.....saflufenacil	2.85 SC		0.0111 lb ai/A	PRE	A	6.7 cd	8.3 a	30.7 a	52.7 a	1.6 a
6	Sharpen.....saflufenacil	2.85 SC		0.0165 lb ai/A	PRE	A	10.7 bc	13.3 a	23.7 a	34.3 a	1.4 a
7	Sharpen.....saflufenacil	2.85 SC		0.0223 lb ai/A	PRE	A	16.3 b	5.7 a	22.7 a	36.3 a	1.6 a
8	Sharpen.....saflufenacil	2.85 SC		0.0445 lb ai/A	PRE	A	24.0 a	16.7 a	24.0 a	37.3 a	1.5 a
LSD (P=.05)							6.71	19.64	25.31	45.71	0.74
Standard Deviation							3.83	11.21	14.45	26.10	0.42
CV							39.28	116.0	45.22	57.79	29.17
Replicate F							0.955	0.792	0.680	1.271	4.167
Replicate Prob(F)							0.4087	0.4723	0.5225	0.3109	0.0380
Treatment F							13.083	1.320	2.009	2.181	1.490
Treatment Prob(F)							0.0001	0.3109	0.1263	0.1016	0.2485

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Control Under Plastic for Peppers

Trial ID: Pep1-11 Cooperator:
 Location: Field #22 Investigator: Mark VanGessel

GENERAL TRIAL INFORMATION

Study Director: Mark VanGessel **Title:** Extension Specialist, Weed Science
Affiliation: University of Delaware Research & Education Center
Address: 16483 County Seat Hwy **City:** Georgetown **State:** DE **Zip Code:** 19947

Crop 1: Pepper **CPSAN** **Variety:** see comments
Planting Date: 05/24/11 **Planting Method:** Transplanted- Hand
Row Spacing: 72 in **Seed Bed:** Plasticulture

SITE AND DESIGN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 20 FT **Reps:** 3
Site Type: Field **Study Design:** RANDOMIZED COMPLETE BLOCK
Tillage Type: Conventional Tillage

Trial Initiation Comments: Beds were formed prior to herbicide treatment applications and then plastic was laid.

MAINTENANCE

Field Prep./Maintenance: Row middles were sprayed with Gramoxone + Dual

No.	Date	Treatment Name	Form Conc	Form Type	Rate	Rate Unit
1.	06/16/11	Gramoxone Inteon	2	SL	1	qt/A
2.	06/16/11	Dual II Magnum	7.64	E	0.75	pt/A
3.	06/16/11	Nonionic Surfactant			0.25	% v/v

SOIL DESCRIPTION

% Sand: 80 **% OM:** 0.8 **Texture:** sandy loam
% Silt: 10 **pH:** 6.3
% Clay: 10 **CEC:** 4.9 **Fert. Level:** Medium

Irrigation/Type: Trickle **Frequency:** as needed
Overall Moisture Conditions: See Temperature & Rainfall Charts at front of book
Closest Weather Station: Univ. of Delaware Research & Education Center, Georgetown
Distance: 0.5 **Unit:** mi

APPLICATION DESCRIPTION

	A
Application Date:	05/18/11
Time of Day:	2:15 pm
Application Method:	Spray
Application Timing:	Pre-Tran
Applic. Placement:	BroSoi
Air Temp., Unit:	70 F
% Relative Humidity:	71
Wind Velocity, Unit:	4 mph
Wind Direction:	Southeast
Dew Presence (Y/N):	N
Soil Temp., Unit:	69 F
Soil Surf. Moisture:	Moist
Root Zone Moisture:	Moist
Leaf Surf. Moisture:	N/A
% Cloud Cover:	80

APPLICATION EQUIPMENT

	A
Appl. Equipment:	Backpack
Operating Pressure:	31 psi
Nozzle Type:	AIRMIX
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 in
Boom Length, Unit:	4 nozl
Boom Height, Unit:	18 in
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	20 gpa
Propellant:	CO2

Trial Comments

Pepper varieties planted were "Snapper" bell, "El Jefe" jalapeno, "Carmen" sweet banana, "Peppino" cherry bomb, and "Cheyenne" chili.

8/8/11 - Rating Code:

Not Present = 0

1 Present = 0.5

2+ Present = 1

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Weed Code					ERAME	CYPES	SOLCA	AMASS	MOLVE	IPOLA		
Crop Code					Stink-grass	Yellow	Horse-	Pigweed	Carpet-	Pitted		
Weed or Crop Name					Count	Nutsedge	nettle	Species	weed	Morngrly		
Weed or Crop Name					Count	Count	Count	Count	Count	Count		
Rating Data Type					#/1sqft	#/1sqft	#/1sqft	#/1sqft	#/1sqft	#/1sqft		
Rating Unit					06/13/11	06/13/11	06/13/11	06/13/11	06/13/11	06/13/11		
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Stg						
1	Untreated Check						0.3 a	3.0 a	0.3 a	0.3 a	0.0 a	1.0 a
2	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran		0.0 a	7.0 a	0.3 a	0.0 a	0.3 a	0.3 a
3	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran		0.0 a	1.0 a	0.3 a	0.7 a	0.0 a	0.3 a
	Command.....clomazone	3	ME	0.25 lb ai/A	Pre-Tran							
4	Dual Magnum.....s-metolachlor	7.62	E	0.95 lb ai/A	Pre-Tran		0.0 a	3.0 a	0.0 a	0.0 a	0.0 a	1.0 a
5	GoalTender.....oxyfluorfen	4	FL	0.1875 lb ai/A	Pre-Tran		0.0 a	8.7 a	0.3 a	0.0 a	0.0 a	0.3 a
6	Sandea.....halosulfuron	75	DF	0.0155 lb ai/A	Pre-Tran		0.0 a	3.0 a	0.0 a	0.3 a	1.0 a	0.0 a
LSD (P=.05)					0.43	6.79	0.79	0.79	0.79	0.79	1.82	
Standard Deviation					0.24	3.73	0.43	0.43	0.43	0.43	1.00	
CV					424.26	87.22	195.58	195.58	195.58	195.58	200.0	
Replicate F					1.000	0.196	2.059	0.294	2.059	0.000		
Replicate Prob(F)					0.4019	0.8255	0.1783	0.7514	0.1783	1.0000		
Treatment F					1.000	1.824	0.471	1.176	2.588	0.500		
Treatment Prob(F)					0.4651	0.1958	0.7902	0.3852	0.0941	0.7700		

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code					IPOHE	CPSAN	CPSAN	CPSAN	CPSAN	CPSAN	
Crop Code					Ivyleaf	Snapper	El Jefe	Carmen	Peppino	Cheyenne	
Weed or Crop Name					Morngrly	Bell	Jalapeno	SwBanana	ChrryBom	Chili	
Weed or Crop Name					Count	Injury	Injury	Injury	Injury	Injury	
Rating Data Type					#/1sqft	%	%	%	%	%	
Rating Unit					06/13/11	06/16/11	06/16/11	06/16/11	06/16/11	06/16/11	
Rating Date											
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Stg					
1	Untreated Check						0.0 a	0.0 a	0.0 a	0.0 a	0.0 a
2	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran		0.0 a	0.0 a	0.0 a	0.0 a	0.0 a
3	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran		0.0 a	0.0 a	0.0 a	0.0 a	0.0 a
	Command.....clomazone	3	ME	0.25 lb ai/A	Pre-Tran						
4	Dual Magnum.....s-metolachlor	7.62	E	0.95 lb ai/A	Pre-Tran		0.0 a	2.3 a	0.0 a	0.0 a	2.3 a
5	GoalTender.....oxyfluorfen	4	FL	0.1875 lb ai/A	Pre-Tran		0.3 a	0.0 a	0.0 a	0.0 a	0.0 a
6	Sandea.....halosulfuron	75	DF	0.0155 lb ai/A	Pre-Tran		0.0 a	8.3 a	0.0 a	0.0 a	1.7 a
LSD (P=.05)					0.43	6.00	0.00	0.00	0.00	3.86	
Standard Deviation					0.24	3.30	0.00	0.00	0.00	2.12	
CV					424.26	185.62	0.0	0.0	0.0	318.2	
Replicate F					1.000	1.857	0.000	0.000	0.000	0.481	
Replicate Prob(F)					0.4019	0.2061	1.0000	1.0000	1.0000	0.6315	
Treatment F					1.000	3.082	0.000	0.000	0.000	0.741	
Treatment Prob(F)					0.4651	0.0612	1.0000	1.0000	1.0000	0.6103	

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Weed Code						CPSAN	CPSAN	CPSAN	CPSAN	CPSAN	DIGSA
Crop Code						Snapper	El Jefe	Carmen	Peppino	Cheyenne	Large
Weed or Crop Name						Bell	Jalapeno	SwBanana	ChrryBom	Chili	Crabgras
Weed or Crop Name						Injury	Injury	Injury	Injury	Injury	Count
Rating Data Type						%	%	%	%	%	#/1sqft
Rating Unit						%	%	%	%	%	#/1sqft
Rating Date						06/28/11	06/28/11	06/28/11	06/28/11	06/28/11	06/28/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg						
1	Untreated Check					0.0b	0.0a	0.0a	0.0a	0.0a	0.3a
2	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran	0.0b	0.0a	0.0a	0.0a	0.0a	0.0a
3	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran	0.0b	0.0a	0.0a	0.0a	0.0a	0.0a
	Command.....clomazone	3	ME	0.25 lb ai/A	Pre-Tran						
4	Dual Magnum.....s-metolachlor	7.62	E	0.95 lb ai/A	Pre-Tran	0.0b	0.0a	0.0a	0.0a	3.3a	0.0a
5	GoalTender.....oxyfluorfen	4	FL	0.1875 lb ai/A	Pre-Tran	0.0b	0.0a	0.0a	0.0a	0.0a	0.0a
6	Sandea.....halosulfuron	75	DF	0.0155 lb ai/A	Pre-Tran	6.7a	0.0a	0.0a	0.0a	3.3a	0.0a
LSD (P=.05)						4.29	0.00	0.00	0.00	5.42	0.43
Standard Deviation						2.36	0.00	0.00	0.00	2.98	0.24
CV						212.13	0.0	0.0	0.0	268.33	424.26
Replicate F						1.000	0.000	0.000	0.000	2.500	1.000
Replicate Prob(F)						0.4019	1.0000	1.0000	1.0000	0.1317	0.4019
Treatment F						4.000	0.000	0.000	0.000	1.000	1.000
Treatment Prob(F)						0.0297	1.0000	1.0000	1.0000	0.4651	0.4651

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code						ELEIN	CYPES	SOLCA	AMASS	MOLVE	POLPY
Crop Code						Goose-	Yellow	Horse-	Pigweed	Carpet-	Penn.
Weed or Crop Name						grass	Nutsedge	nettle	Species	weed	Smartwd
Weed or Crop Name						Count	Count	Count	Count	Count	Count
Rating Data Type						#/1sqft	#/1sqft	#/1sqft	#/1sqft	#/1sqft	#/1sqft
Rating Unit						#/1sqft	#/1sqft	#/1sqft	#/1sqft	#/1sqft	#/1sqft
Rating Date						06/28/11	06/28/11	06/28/11	06/28/11	06/28/11	06/28/11
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Stg						
1	Untreated Check					1.3a	3.0a	0.7a	1.0a	0.3a	0.0a
2	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran	0.0a	3.7a	0.7a	0.0a	0.0a	0.0a
3	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran	0.0a	1.3a	0.7a	0.3a	0.0a	0.0a
	Command.....clomazone	3	ME	0.25 lb ai/A	Pre-Tran						
4	Dual Magnum.....s-metolachlor	7.62	E	0.95 lb ai/A	Pre-Tran	0.0a	0.7a	1.0a	0.0a	0.0a	0.3a
5	GoalTender.....oxyfluorfen	4	FL	0.1875 lb ai/A	Pre-Tran	1.0a	3.3a	0.7a	0.0a	0.3a	0.0a
6	Sandea.....halosulfuron	75	DF	0.0155 lb ai/A	Pre-Tran	3.3a	2.7a	0.3a	0.3a	0.0a	0.0a
LSD (P=.05)						3.21	3.63	1.73	1.51	0.54	0.43
Standard Deviation						1.77	2.00	0.95	0.83	0.30	0.24
CV						187.09	81.7	142.3	298.8	268.33	424.26
Replicate F						1.619	0.432	1.296	0.323	2.500	1.000
Replicate Prob(F)						0.2459	0.6609	0.3158	0.7315	0.1317	0.4019
Treatment F						1.641	1.058	0.148	0.661	1.000	1.000
Treatment Prob(F)						0.2361	0.4370	0.9760	0.6610	0.4651	0.4651

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Weed Code					IPOHE	DIGSA	ELEIN	CYPES	SOLCA	AMASS		
Crop Code					Ivyleaf	Large	Goose-	Yellow	Horse-	Pigweed		
Weed or Crop Name					Morngrly	Crabgras	grass	Nutsedge	nettle	Species		
Weed or Crop Name					Count	Count	Count	Count	Count	Count		
Rating Data Type					#/1sqft	#/1sqft	#/1sqft	#/1sqft	#/1sqft	#/1sqft		
Rating Unit					06/28/11	07/14/11	07/14/11	07/14/11	07/14/11	07/14/11		
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg						
1	Untreated Check						0.3 a	0.3 a	0.7 a	4.0 a	0.3 a	0.0 a
2	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran		0.0 a	0.3 a	0.0 a	10.7 a	1.3 a	0.0 a
3	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran		0.0 a	0.0 a	0.0 a	2.0 a	0.7 a	0.3 a
	Command.....clomazone	3	ME	0.25 lb ai/A	Pre-Tran							
4	Dual Magnum.....s-metolachlor	7.62	E	0.95 lb ai/A	Pre-Tran		0.0 a	0.0 a	0.0 a	0.3 a	1.3 a	0.0 a
5	GoalTender.....oxyfluorfen	4	FL	0.1875 lb ai/A	Pre-Tran		0.0 a	0.0 a	0.0 a	7.0 a	0.3 a	0.3 a
6	Sandea.....halosulfuron	75	DF	0.0155 lb ai/A	Pre-Tran		0.0 a	3.3 a	0.0 a	0.7 a	1.0 a	0.0 a
LSD (P=.05)					0.43	4.29	0.86	13.04	1.73	0.54		
Standard Deviation					0.24	2.36	0.47	7.17	0.95	0.30		
CV					424.26	353.91	424.26	174.31	113.84	268.33		
Replicate F					1.000	1.108	1.000	0.316	4.630	2.500		
Replicate Prob(F)					0.4019	0.3676	0.4019	0.7362	0.0377	0.1317		
Treatment F					1.000	0.934	1.000	0.957	0.704	1.000		
Treatment Prob(F)					0.4651	0.4988	0.4651	0.4868	0.6336	0.4651		

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

Weed Code					MOLVE	CHEAL	SETFA	AMASS	IPOSS	DIGSA		
Crop Code					Carpet-	Common	Giant	Pigweed	Morngrly	Large		
Weed or Crop Name					weed	Lambqtrs	Foxtail	Species	Species	Crabgras		
Weed or Crop Name					Count	Count	Count	present	present	present		
Rating Data Type					#/1sqft	#/1sqft	#/1sqft	absent	absent	absent		
Rating Unit					07/14/11	07/14/11	07/14/11	08/08/11	08/08/11	08/08/11		
Rating Date												
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Grow Stg						
1	Untreated Check						0.0 a	0.7 a	0.0 a	0.67 a	0.67 a	0.67 a
2	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran		0.3 a	0.0 b	0.0 a	0.50 a	0.33 a	0.17 a
3	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran		0.3 a	0.0 b	0.0 a	0.33 a	0.33 a	0.00 a
	Command.....clomazone	3	ME	0.25 lb ai/A	Pre-Tran							
4	Dual Magnum.....s-metolachlor	7.62	E	0.95 lb ai/A	Pre-Tran		0.0 a	0.0 b	0.0 a	0.17 a	0.50 a	0.17 a
5	GoalTender.....oxyfluorfen	4	FL	0.1875 lb ai/A	Pre-Tran		0.0 a	0.0 b	0.0 a	0.33 a	0.33 a	0.50 a
6	Sandea.....halosulfuron	75	DF	0.0155 lb ai/A	Pre-Tran		0.7 a	0.0 b	0.3 a	0.17 a	0.50 a	0.83 a
LSD (P=.05)					0.64	0.43	0.43	0.460	0.773	0.717		
Standard Deviation					0.35	0.24	0.24	0.253	0.425	0.394		
CV					157.32	212.13	424.26	70.0	95.61	101.42		
Replicate F					3.182	1.000	1.000	1.522	5.154	0.357		
Replicate Prob(F)					0.0852	0.4019	0.4019	0.2649	0.0290	0.7082		
Treatment F					1.818	4.000	1.000	1.783	0.308	2.071		
Treatment Prob(F)					0.1969	0.0297	0.4651	0.2041	0.8973	0.1531		

Means followed by same letter do not significantly differ (P=.05, LSD)

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Weed Code					CYPES
Crop Code					Yellow
Weed or Crop Name					Nutsedge
Weed or Crop Name					present
Rating Data Type					absent
Rating Unit					08/08/11
Rating Date					
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Grow Unit Stg
1	Untreated Check				0.33 bc
2	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran 1.00 a
3	Devrinol.....napropamide	50	DF	1.5 lb ai/A	Pre-Tran 0.00 c
	Command.....clomazone	3	ME	0.25 lb ai/A	Pre-Tran
4	Dual Magnum.....s-metolachlor	7.62	E	0.95 lb ai/A	Pre-Tran 0.00 c
5	GoalTender.....oxyfluorfen	4	FL	0.1875 lb ai/A	Pre-Tran 0.67 ab
6	Sandea.....halosulfuron	75	DF	0.0155 lb ai/A	Pre-Tran 0.17 bc
LSD (P=.05)					0.567
Standard Deviation					0.312
CV					86.35
Replicate F					0.143
Replicate Prob(F)					0.8686
Treatment F					4.943
Treatment Prob(F)					0.0154

Means followed by same letter do not significantly differ (P=.05, LSD)

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.